The Builder.

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THE responsibility of those who design without knowledge, and build without care, has been made obvious in Ireland, to those who needed practical illustration, by the verdict of the coroner's jury, touching the death of sixteen individuals, unfortunately caused by the fall of a mill at Beers' Bridge, Belfast, on the 10th of January last, and briefly mentioned in our columns at the time. The interior of the mill, to make it fire-proof, was formed by iron columns and brick arches,—a dangerous mode of construction in ignorant hands,—and was on the point of being slated, when it fell. It was about 84 feet long, 47 feet wide, and 42 feet high. The roof was in one span, and each rafter about 27 feet long. There were three storys and an attic. The walls were 2 feet thick at bottom, and 1 foot 3 inches in the upper floor.

The cause of the failure occupied the jury from the 11th of January, by adjournment, up to Saturday, the 8th of February, during which time a great number of professional and other witnesses were examined. It appeared that a mechanical engineer, not practically acquainted with building, had been consulted with regard to how far an old mill, formerly in use for the scutching of flax, could be most economically converted into a fire-proof mill for preparing flax for spinning by machinery. And with him it was arranged to take down the old walls to within about 3 feet from the ground, and to commence the new structure upon the old foundations. Down the centre nearly of the building was to be a row of nine cast-iron columns, 8 inches in diameter, and 11 feet 8 inches long, for which *new foundations had to be built*. The side wall was to have been 36 feet high; but after the plan had been drawn, it was resolved to put an additional floor, making three storys and the attic. It was alleged to the contractor, that this augmentation would only add 3 feet to the height of the building; but it turned out that it added at least 5 feet. It was stated, that the practical engineer had sanctioned this increase of height and weight on the building, without making any inspection to enable him to judge of the character of either work or materials; both of which, it was asserted, were bad. There was a mixture of new and old bricks; and many of the latter were thicker than the new, and in the proportion of about three to one, or at least two to one; a large number of them being moreover bats.

The iron columns were placed 22 feet from one side wall, and 22 feet 10 inches from the other, and supported iron girders meeting on the columns, with collar flanges secured by screws and nuts, and projecting snugs, upon which malleable bands, or rings, were to be introduced hot. From girder to girder brick arches were thrown, resting the skew-back on the flange on the bottom of the girder. On the wall ends of the upper, or third girder, there were attached vertical castings, having a shoe on the top to receive the end of the timber principal. There was a collar brace dovetailed on these at about 7 feet from the top, opposite to which the upper purlin was fixed, at about 9 feet 6 inches from the ridge, on the back of the principal.

After the building had progressed, so as to have the roof nearly slated, an excavation was made for a sewer, along the sides of the rubble masonry: the centre of this was 6 feet from the centre of the columns at the south end, and 3 feet 6 inches at the north.

One of the witnesses examined thought the mill fell through the dampness of the atmosphere acting on the mortar, it not being made of hydraulic lime; a second, because of the unequal sizes of the bricks; and a third, Mr. M'Henry, an architect, through the bad foundation under the columns, and the weakness caused by the excavation just mentioned. Some said the work was hurried (it occupied from Oct. 1 to Jan. 10) and negligently done; others that it was sufficient.

One of the opposing solicitors, to show the responsibility of the owner of the mill (Mr. Boyd), quoted a *nisi prius* case of a man who had employed an architect to build a house. The architect employed a carpenter to do the work. The latter employed a bricklayer, who again employed a lime-burner to supply him with lime. The lime was so improperly placed on the road, that a carriage, with a lady and gentleman, passing by, the horse was tripped up and fell, and the lady and gentleman were flung out. An action was brought against the owner of the house, and damages given by the jury.

Mr. Garrett, solicitor for Mr. Boyd, after contending that there had been no neglect, that full time had been allowed for the work, that the materials were sufficient, that the bricklayer employed (Magee) was competent, and that, even supposing there had been neglect on the part of Magee, there was no testimony to show that Mr. Boyd was criminally responsible,—said, that as to the appointment of an architect, or clerk of works, it was not necessary to tell the jury that it was *quite unusual, in Belfast, to employ either one or other;* and respectable witnesses had shown them that the workmen might "scamp" their work, even with a clerk over them. One had told them that he always recommended the employment of an architect, when giving plans for a fire-proof building, not because he had apprehended loss of life, but merely that it enabled him to fit up the machinery more easily. And that gentleman had even stated, that he had himself built two mills without the aid of any architect. The jury knew that such was the general practice. And he scouted the notion that any charge of criminal neglect, amounting to manslaughter, could be brought against his client.

Mr. Rea, on the part of the relatives of the deceased, and in support of charges against Mr. Boyd and Mr. Magee, as owner and contractor, said,—In *The King* v. *Nancy Simpson*, reported in "Wilcock on the Laws relating to the Medical Profession," Justice Bailey said he took it to be quite clear, that, "if a person not of medical education, in a case where professional aid might be procured, undertook to administer medicine which might have an injurious effect, and thereby occasion death, such person was guilty of manslaughter. He may have no evil intention, and may have a good one, but he has no right to hazard consequences. If he do so, it is at his own peril; and, whether he prepared the medicine himself, or got it from another, the prisoner should be convicted." That was a case ruled by Mr. Justice Bailey: and, six months hence, might they not, he asked, see in the Irish law reports, the case of *The Queen* v. *Robert Boyd* and *John Magee*, in which it would be ruled by Mr. Justice Perrin, at the Downpatrick Assizes, on the same principle as in the case he had just quoted, that, "if a person not of architectural education, in a case where the service of architects could be procured, undertook to erect a huge edifice, such as a fire-proof mill, composed of ponderous materials, which may fall, and that the building does fall, and thereby causes death, such person is guilty of manslaughter. He may have no evil intention, and may have a good one, but he has no right to hazard the consequences in a case where architectural assistance may be obtained. If he do so, it is at his own peril, and the prisoner must be convicted." He maintained that, if ever there were a proper case cited by lawyer in a court of justice, this was a case in point. Mr. McHenry had said that if the mill were standing at the present moment, no human being could tell at what moment it *would* fall to the ground; and that it was only by the mercy of Providence that five hundred individuals, instead of sixteen, had not lost their lives. Was a course which might entail such a result as that to be permitted with impunity?

The coroner having summed up, the jury were closeted for five hours, and then gave the following verdict as the opinion of the majority:—

"We find that James Greer, &c., &c., came by their deaths in consequence of a newly-built mill, at Beers'-bridge, having fallen on them, whilst they were working therein, on the morning of the 10th of January, 1851, and we are of opinion that the falling of the said mill was caused by its having been hastily and improperly built, both with regard to the material used, and the manner of its erection; and we are of opinion that Robert Boyd and John Magee *are wilfully and feloniously guilty of the improper construction and erection of the said mill.*"*

The solicitor of Mr. Boyd entered a *caveat* against the verdict, denying that the "improper construction and erection of a mill could be considered a criminal offence," and warning the coroner not to issue a warrant on the inquisition.

We give publicity to these proceedings with the earnest hope that some, in England as well as Ireland, may thereby be led to reflect on the possible consequences of their own acts. We express no opinion as to the insufficiency or otherwise of the work done at the mill in question: the point to be condemned here is the non-employment of a properly qualified architect. On all sides of us, however, houses are being carried up in the most insufficient manner,—on a bad system, with bad materials, and worse workmanship. The wonder is that they can be kept up: both theory and practice would say they *must* fall;

* Ten of the jurors handed the coroner the following:—"We find that James Greer, &c., came by their deaths in consequence of a newly-built mill, at Beers'-bridge, having fallen on them, whilst they were working therein, on the morning of the 10th of January, 1851, and although we consider the falling of the said mill an accidental circumstance, we cannot avoid recording our opinion that sufficient care was not taken in its erection, although we do not consider that that neglect amounts to criminality."

and they do fall constantly, but little is said about it, except the accident be attended with loss of life, as in the case before us, and a coroner's inquest bring the matter before the public. A correspondent, who appears to be well informed on the occurrence we have set forth, says: "There is a class of small builders in Belfast who, in order to secure employment, will get the architect's plans and specification to prepare tenders from, when the chances are, that the next day the architect is informed by the proprietor that, on consideration, he will not do any thing more at present, as it would involve him in too much cost. But mark what follows: in five or six weeks we find the same contractor who borrowed the documents actually at work without overseer, clerk of works, or architect, and making his unfortunate employer believe he is about saving him one-half the entire cost."

Belfast is not the only place in the world where such conduct, which would, of course, be scouted by any respectable builder, is practised. Proprietors about to build might ask themselves, if men who can be guilty of it are likely to exhibit the integrity and honourable feeling they would like to find in those they employ.

THE UNITY OF ART.

That Art is *one* is a proposition which, amongst its followers, appears not to receive that recognition to which a due consideration of its possible consequences would seem to entitle it. Familiar with, and by long habit accustomed to, the manipulations (if I may so term them) of his own peculiar branch of art, the professor sees, if the subject occupy his attention at all, but a dim and shadowy resemblance between it and others, which, if pursued, is in most cases soon entirely lost sight of in that sea of technicalities which every aspirant must pass through ere he reach the mastery he aims at; and thus, though the painter or architect may love the voice of music, the musician revel in the poet's rhyme, and the poet gaze with delight on pictures or on palaces, yet shall each be unable truly to appreciate or detect those excellences or errors which, in his own department, he lights on as by intuition; and the eye that, almost at a glance, can disentangle the intricacies of the palette, finds itself blind to those of the music score; and the mind that can bring forth verse worthy to be sung by angels, is incapable of wedding it to aught of music that might elude the scorn of men.

To alleviate these inconsistencies, as far as my humble endeavours may, to show the proper unity of art to both its professors and admirers, and by so doing to add to the productive power of the one and the perceptive power of the other, is the object of the following observations. I shall, in the first place, endeavour to define the unity of art,—to show in what way art is one; and, secondly, to exhibit the consequences of this unity, or the use of the doctrine.

In defining the unity of art, I observe, in the first place, that art is one in its origin. Art is a spiritual apprehension of nature: the followers of its different branches are alike votaries of the beautiful: the painter, and sculptor, and architect are priests of the mystery of form, as the musician is of the mystery of sound, and through their different vehicles they communicate their secrets to mankind. Each of the arts is properly the result of the highest application of the loftiest faculties of the human mind, and is but a different mode or mean "by which human nature's mysteries are reflected or illuminated." The arts are not, however, derived from their parent source in exactly the same manner: the architect does not literally copy nature: "the image he carries away with him," as Mr. Ruskin truly remarks, "represents what we can only perceive in her by direct intellectual exertion, and demands from us, wherever it appears, an intellectual exertion of a similar kind in order to understand and feel it." The business of the architect is to produce an edifice with all the grace of which its essential forms are susceptible; in doing which he cannot directly imitate nature, except in those parts which are properly called decorations: he will lieten to her precepts and follow her in spirit throughout; but direct imitation, in the general and structural forms, is not a principle of architecture; and in this respect (viz. its non-imitation) it is inferior to the other arts of form: doors, windows, columns, entablatures, however imposing in their symmetrical and geometrical grace, must be subordinate, in sensuous beauty and interest, to the human and other figures and objects that enter into the compositions of the painter or sculptor. Architecture is, however, as much the offspring of nature as the rest: her beauty is the muse of the architect as well as of the painter and sculptor. From the unbounded variety of design and form which is exhibited in the wide domain of nature, was evolved the true principles of ancient architecture, and every meritorious trait which subsequent styles have developed, may be traced to the same source.

As to poetry and music, though differing widely from the three former arts in their outward manifestations, they are equally the offspring of the common mother: both have their natural archetypes. I do not mean that they are literal imitations of nature—(a flute-player does not imitate the lark, but he puts the same feeling, or inflection of feeling, into his flute that the lark puts into his throat)—they are the reproduction of the utterances of nature as interpreted by the human heart. "A particular picture or copy of verses," writes an eloquent author, "if it do not awaken the same train of images, will yet induce the same sentiment as some wild mountain walk." "Vocal music is a harmonious expression of the passions which find utterance in the voice." Music is more abstract than the other arts, not excepting architecture: it is least of all a direct imitation of nature: it is the least material—the most spiritual; and might be imaged or conceived as the harmonious spirit of the rest. It does not, like poetry, and painting, and sculpture, give us a train of images: it does not present objects or actions either to our mental or bodily eye; but it awakens the emotions which certain objects or actions, bearing analogous resemblance to them, would themselves have excited. Music is as perfectly systematised as the rest: different chords predominate in susceptibility in different breasts; but every one, not physically deficient, is affected with substantially the same emotions that were felt by the author in composing, and which he communicated to the piece.

To this identity of origin, each department of art bears testimony in many ways; in none, perhaps, more strongly, than in the similarity of use or office of the model, theme, subject, or whatever the ground-work may be called on which the material expressions of genius are founded. In the figure,—the musical phrase,—the place, person, or action,—the painter or sculptor, the musician or the poet, alike see but the dead body, as it were, which it is their province to vivify with that portion of infinite beauty and truth which has been revealed to them; or the germ from which it is their task to evolve those trains of lasting consequence which their gifted penetration has foreseen. It is here lies the difference between the mind of the artist and that of the ordinary spectator. In the circus, the theatre, at their solemn games and festivals, doubtless the Greeks of old gazed (and admiringly) on many a noble naked form, and haply among them, on the model of the Belvidere Apollo; but to the sculptor Agasias only was it given, through the perishable pride of manhood, to see the unfading and majestic beauty of the immortal. Others saw in his model but, though finely formed and noble looking, a man even as themselves; but it was not so with the sculptor: he looked not only on, but *through*, and whilst with bodily eye he gazed on the man,

"With an eagle's flight
His proud soul mounted through the fields of light,
View'd the bright conclave of heaven's blest abode,
And the cold marble leap'd to life a god."

Nor are the other arts behindhand in bearing similar testimony to their common source: the productions of the musician and the poet tell the same tale to the soul as those of the painter or sculptor, and through their respective media evidence the forehearing and the forethought of the artist, as the picture or statue does his foresight; all alike showing the same informing and evolving power, derived from communion with the infinite, which enables them, from subjects (viewed abstractedly) inconsiderable as the first faint streaks of the morning, to bring forth a beauty and a truth refulgent as the noonday sun.

I observe, in the second place, that art is one in its end. The use or office of every great man is to enlarge the sphere of human intellect, to push its boundaries farther into chaos, and invade the dark unknown; and the artist goes abreast of the poet in this work,—in threading the labyrinth of life,—in decyphering the handwriting "upon our cell." And the value to us of his productions, as of the poet's, lies in their depth and truth. As in dramatic poetry, the source of the charm is the same, whether we turn to tragedy or comedy, viz., truthful representation; so in the arts, however different, however contrasting in their material manifestation, genius is not to amuse, but to refine, to elevate and advance us, by trimming the great lamp of the soul—truth,—and leading us

"On to truth's eternal source."

The object of each of the arts is to show us *what is really in nature and life*,—to develope the finer spirit of things,—to seek after the true and the beautiful, and to reveal it to mankind, and let in light upon the higher and subtler truths of existence. Fiction makes a romance of history,—art a romance of nature,—a poetic delineation of her features. Here is the superiority of art to nature,—the landscape artist unfolds to us a fairer creation than we know; he conveys to his canvas "the gloom of gloom and the sunshine of sunshine;" he will seize the life and expression,—the quintessence of nature, not nature herself,—the poetry, not the prose,—and communicates, through his work to the spectator, his own sense of the power and beauty and harmony of the universe. It is the same with portraiture: the daguerreotype process will produce a portrait mechanically perfect: the painter cannot do that, but he can do more—he can study the character of his sitter, *and portray the soul*. Notwithstanding the mechanical correctness of the daguerreotype, it is never equal as a likeness to the painted picture—what might easily have been predicted of it: the former is the production of a sunbeam; the latter, of a human agent, a higher source, and consequently the parent of a higher issue.

It is not because of any deficiency or weakness of nature that the ministry of art was instituted. Nature, we should remember, is but another name for infinity. Art is but the ministress of nature,—the priestess to her divinity, to lead us to the footsteps of her throne. Our perceptive organs and faculties must be educated before the varied excellence of works of art will be unfolded to the intellect; but the ultimate end of art itself is to educate the eye to a true perception and just appreciation of nature, and awaken us to the enchantment that surrounds us. Without education in art, nature is partly a sealed book: the eye cannot discern that beauty for the contemplation of which it was created. Whilst ignorant of the wonders of art we cannot duly appreciate the capabilities of nature to affect the soul: to do justice to her grandeur and sublimity, and guess her full significance, we must trace her features and principles through the mind of the artist to their new development or higher and spiritualized form in the realm of art. The object of landscape painting is to open the eye to the eternal and ever-changing picture of earth and sky; of portraiture, to the beauty of the human form and face; and of all art, by initiating us into the

mystery of form, and colour, and sound, to lead us to feel, more deeply than we could otherwise do, the wisdom, and goodness, and power of the supreme artist.

I observe in the third place that art is one in its ruling principles: its various streams flow in obedience to and by virtue of one law; and the painter, the musician, the architect, and the poet, if they have proposed to themselves the same end of design in their respective productions, must, to effect it, use their differing materials after the same manner, and each, in the peculiar vehicle of his art, travel the same road. In other words,—in the expression of the same quality or feeling, the same law of means obtains in all the arts, *i. e.*, the elements must be used upon the same principle: for example,—let the expression sought be grandeur or sublimity: to ensure it, are required the four following qualities or properties, viz., magnitude, breadth, simplicity, power. 1st. The scale must be large. We cannot paint a grand miniature, or write a grand ballad, or perform a grand symphony on the flute, or build a grand cottage. 2ndly. The masses must be broad. We must have broad lights and shadows, broad harmonies and instrumentations, with the judicious use of the unison, and ideas comprehensive and not too precise in definition. 3rdly. The unity of expression must predominate over elaboration of detail. There must be no miniature handling, no curious intricacy of accompaniment, no million-wrinkled draperies, no nigglements and fritterings of expression. 4thly. There must be the full body of colour, tone, relief, and language.

The same law holds rule over any other design of expression, whether direct or modified. Is, for instance, the grand to be expressed through the medium of the awful? Straightway the picture darkens,—all minute ornament is veiled, the clear decided outline is lost, and faint streaks and glimmerings of light serve but to indicate forms, whose undefined magnitude the imagination can but fill up with dread: from the orchestra the melody loses its continuity and appears but at intervals, as the lurid gleam of the setting sun through the thunder cloud, amid the gloomy and undefined roll of wild discordant sequences, which tell to the ear what the shadows of the picture tell to the eye: in the temple recesses, whose limits are buried in darkness as of the grave, and long drawn aisle the termination of which is lost in the duskiness of "dim religious light," are conveyed in like manner to the mind, the same dread certainty of the uncertain; and the poem, in the absence of all minuteness of description, in its ambiguous language, in its thoughts,

"Shrouded and folded up
In their own formless barrier,"

darkly embodies a definition of the undefinable.

Is the gayful, the elegant, the graceful, the theme? Straightway light sparkles over the canvas like springtide raindrops in the sunbeam: the scale is smaller, the outline involved, flowing and returning on itself, the colouring prismatic in its hues and tones, and the whole is evidenced, not so much by balance of proportion as by the absolute unanimity of the parts: from the orchestra in like manner, the melody sallies out in undulating flow, sparkling with every grace, and turn, and trill that music gives, and with its sportive catches of counterpoint and imitation, with the elegance and the mirth that rings from every note of every part, translates the brilliant hues and forms of the picture into kindred sounds and harmonies: in architecture the fluted Corinthian column, with its floral capital, the light, carved-moulded, and modillioned cornice, sculptured frieze, delicate festoon, wreath, or other emblem of pleasure, convey the same impression; and in the poet's rhyme we

"Wander, not unseen
By hedge-row elms and hillocks green;"

Or, listen as

"The merry bells ring round,
And the joyful rebeck's sound."

We gaze

"On many a youth and many a maid
Dancing in the chequered shade;
And young and old come forth to play
On a sunshiny holiday."

Nor is it in generalities alone that this unity exhibits itself: if we descend to particulars, we find it still manifested; and the small single touch of light, shade, or colour in the picture,—the single bar or note amid an ocean of rests in the orchestral part; the small and delicate enrichment in panel or cornice, in the building; the slight, but felicitous touch of thought, by means of metaphor or compound epithet, in the poem: all these, so chancelike in themselves, yet so nicely fitted to their respective subjects, that come upon us so unexpectedly, yet so suitably, are but the workings of one purpose, by one law—the expression of one idea through different materials.

The grand aim of each of the arts is so to arrange its varied elements as to procure unity of result. These elements are as follow:—

Poetry	Idea ...	Design	Feeling or Sentiment	Diction or Style
Painting ...	Line ...	Form	Chiaroscuro	Colour
Sculpture ...	Line ...	Form	Relievo	
Architecture	Line ...	Form	Projection... and Recession of the parts	Decoration (including colour)
Music	Melody	Mode or key	Harmony ...	Instrumentation

And a comparison of these elements will show wherein the arts are alike, and have common bearings, and in what respects they differ. Line and form in painting and sculpture, which include grouping and composition, beauty, and grace, expression and action, answer to line and form in architecture, in which the relative magnitude and arrangement of the parts and masses answer to the grouping of the painter and sculptor; and what the background is in painting, as Sir J. Reynolds has remarked, in architecture is the real ground on which the building is erected. Chiaroscuro in painting answers to relievo in sculpture, and to the recession and projection of the parts in architecture; whilst the single element of colour in painting answers to the two elements of colour and decoration in architecture. Texture in architecture, which is not properly an element of art, may answer to handling in sculpture and painting. Poetry and music are equally connected in this way with each other and with the rest; melody in music answering to idea in poetry, and to outline in painting and sculpture, and architecture; and so of the rest.

I am borne out in one of these parallels by the casual observations of more than one writer of celebrity. I have made, as may be observed, diction or style in poetry to correspond with colour in painting; and Washington Irving, in his "Life of Goldsmith," commenting on the friendship between the poet and Sir Joshua Reynolds, remarks,—"they were men of kindred genius, excelling in corresponding qualities of their several arts, for style in writing is what colour is in painting: both are innate endowments, and equally magical in their effects: certain graces and harmonies of both may be acquired by diligent study and imitation, but only in a limited degree; whereas, by their natural possessors, they are exercised spontaneously—almost unconsciously—and with ever-varying fascination." Pope, in his preface to "Homer," makes a similar comparison; and Dryden, in his parallel between poetry and painting, observes, "It is the *versification, tropes, figures, and other elegancies* of language and expression, the *colouring of poetry*, that charm the reader, and beautify the fable or design." The arts being different in their scope, there will be minor laws peculiar to some; but they are still based on the great central principles—natural consequences of them, and they as naturally arise out of the peculiarity of their respective vehicles.

In a finished work of art, in any of its branches, whether it be a poem, a symphony, a statue, or a palace, the elements should be distinct in their variety, being neither confused by the harmony nor by the manner of the contrast, breaking the unity; and this result is obtained in each of the arts in precisely the same way, viz., by making each separate element subject to the law of the whole, as, *per exemplum*, in music the melody should possess to the extent of its elementary capabilities, variety of phrase and accent, harmonised to an unity of idea—to a commensurate extent with the piece when fully harmonised, and should, like the outline of the picture, be the primary key or germ of the finished design.

Art requiring distinctiveness in the variety of its elements, calls for contrast, which is the essence of variety, in its works,—as of light and shade, of colour, of form, of tone, of harmony, of magnitude, of feeling, of expression; and the stronger the contrast, the more perfect the variety,—as the opposition, in painting, of the highest light and deepest shade; in music, of dissonant chords with consonant ones; in sculpture, of opposed attitudes and forms; in architecture, of opposed magnitudes —*i. e.* the portico, or tower, or centre mass, as opposed to contiguous inferior elevations; in poetry, of contrast of sentiment or expression. But that this contrast may not run to the extreme of contradiction, and thereby destroy the unity of effect, art also requires, by its law of harmony, that these contrasts, even at their strongest, should be connected with the mass of their similar elements. Hence, in painting, the highest light and deepest shadow must not appear as isolated spots, but must, however strong their opposition, maintain a connection with their principal masses,—as in music the discord must have its opposition to the consonance harmonised by its preparation and resolution.

The arts are all liable to the same adverse influences, and subject to the same diseases. Conventionality and copyism, affectation and whim are as prejudicial—as fatal—to one as to another. There are fixed and invariable laws, referring both to design and execution, which no fashion must set aside or modify: and, as in poetry, we have to do not only with the excellence of the ideas embodied, but with the manner in which they are embodied; so in music, in painting, and in all the arts, no one department can be sacrificed or slighted without injury to the other. The great qualities desirable in one art are invariably desirable in all the others, and in the same degree: the important quality of unity, for example, which it is the aim of all alike to produce, is equally indispensable in all, but only to the same extent; for the works of the architect, of the sculptor, and of the painter, require their episodes as well as the heroic poem.

The unity of art is further apparent when we consider how often, unconsciously as it were, the arts will stray into the province, and take the place, of each other,—how eminently one art will assist and elucidate another,—blending and concentrating their lights to the illustration of some important truth, and affecting us so similarly that we cannot separate their results in our minds. Great works of architecture (not monumental ones only), as well as those of sculpture and painting, are sometimes virtually poetry, and record the deeds, and reflect the virtues, of their hero, or sing the glories of a nation. How often do they fill up a hiatus in some historical record. Kings and priests—classes and communities—have written the history of their struggles, and recorded their triumphs, in stone. Their epics strew the breadth of Europe, and wherever, in the east or in the west, civilization has but dawned. A spell to open all hearts may be lodged in even the accessories of a picture. "Vandyke," says Sir Lytton Bulwer, in reference to his management of a celebrated portrait, "was a greater sophist than Hume." "Should we be so apt," writes he, "to compassionate the misfortunes, and forgive the insincerity, of Charles the First, if his pictures had presented him in a bob-wig and pigtail?" History, on the other hand, is painting: heroes are the sitters or models of the epic poet; and, by the way, I would observe, all great actions are poems and pictures, though not written or painted. Glowing words and noble deeds are but varied workings and expressions of the divine afflatus.

All the arts, as we have seen, start from

the same point, move upon the same principles, to the same goal. I believe the painter and sculptor, though they may generally find, and *do* find, fitting subjects, or outlines of subjects, in history, poetry, or tradition, may claim the same privilege as the poet, and invent a story or fable for themselves: there is, however, so much scope for merit in the execution of painting and sculpture, that the artist may well be content so far to forego the honours of invention, as to take his subject from poetry, or other department of literature. Both painter and poet may deviate from individual forms, and from literal fact: both must raise and idealise their models, avoid accidental imperfections, and give us what *might* be, not what *is*,—the possible, not the actual. But, however these arts resemble one another, each has characteristics essentially its own, arising from the diversity of the avenues of sense by which they enter the mind, viz., ear and eye; and it is necessary, to a right understanding of the unity of art, that these differences be recognised and considered. Actions, or successional objects, are the constituents of poetry; bodies, or co-existent objects, of painting: the former occupies and operates in time,—the latter in space: the force of poetry is continuous and increasing: painting presents a momentary state, and is instantaneous in its effect. We must patiently follow the poet step by step, and be led by him with slowly increasing interest to the final catastrophe, up to which memory must be in full exercise, and indeed is indispensable to the intended result; whilst the painter, choosing that instant of action which is most important, and most suggestive of past and future actions and incidents, reserves all to the last, and depends entirely on the effect of a moment. Both, however, it should be observed, aim at unity of effect: to preserve the unity of his action the poet (and the novelist is often his imitator) frequently departs from the chronological order of events, and "hastens into the midst of things;" interweaving into the subsequent parts of the poem, in the form of episodes, an account of what had preceded in the order of time. I need not say that this was done by Homer in the Iliad, or that Virgil and Milton have followed his example.

In one or other of the two ways I have mentioned, all the arts produce their effect: music participates with poetry in the first, and sculpture and architecture with painting in the second. Each of them has its advantages and disadvantages, according to the subject: sometimes more is given in a dozen lines of poetry than as many pictures could contain; while at others one picture would communicate more than a hundred verses. Flaxman has given us at a glance, in his shield of Achilles, the sum total of many brilliant and widespread descriptions in the verse of Homer. Painting and sculpture, as far as they go, are a more complete execution or embodiment of a conception of material beauty than poetry: "in them," as Von Schelling says, "doubts of a perfection above the common measure, that might otherwise be heard, are met by the fulfilment; as that which in the idea could not be conceived, here steps embodied before our eyes."* S. H.

Locomotive Engines.—M. E. G. Leroy, of Paris, has just patented some improvements in locomotive engines, and in the means and apparatus to be employed for generating and condensing the steam to be employed therein. For condensing steam, it is proposed to employ a tube similar to that of the atmospheric railway, but of smaller dimensions, into which the waste pipe of the engine should lead, and thus effect the desired object. The water of condensation would require to be occasionally drawn off. *Claims.*—1. Generating steam in locomotive engines by the combustion of gases generated or produced in suitable apparatus detached from the engine, and supplied to the engine by pipes or otherwise. 2. The method described of condensing steam. —*Mechanics' Magazine.*

* To be continued.

THE DECORATIONS OF MUNICH.*

I propose to describe the decorations of some of the principal buildings of Munich, more especially those parts of them connected with colour and ornament, which were the objects of my particular study.

Though a city of inconsiderable size, Munich has risen into importance almost entirely through the genius of its artists, fostered and encouraged by a prince enthusiastic in his love for art.

It is a glorious instance of what may be accomplished by the enterprise, perseverance, fine taste, and good judgment of an individual who has thus founded a series of monuments of so high a standard in art as to establish a renown familiar to all Europe.

In conceiving these grand works, the King, after arranging the plans with his architect, was accustomed to summon to his presence the sculptor, the historic painter, the builder, and the decorator, and then and there every one was made familiar with the task he would have to perform. The works show with what success.

The buildings most worthy of notice for their decorations are—the Church of St. Ludwig, the Allerheiligen Capelle, and the Basilica of St. Bonifacius, the Royal Library, the Hofgarten, the Glyptothek, the Pinakothek, the König's-bau, and the Festsaalbau.

In speaking of these I do not propose to describe any architectural peculiarities further than to make their decoration understood. It was with the view of improving myself in that branch of art that I went to Munich and made sketches; and I owe a grateful acknowledgment to Mr. Donaldson, the hon. foreign secretary of the Institute, for a letter he gave me to Professor Gartner, which much facilitated the object I had in view.

I shall commence with the

GLYPTOTHEK.

The Glyptothek, or Museum of Statues, was built for the ex-King Louis, when Crown Prince, by Leo Von Klenze. It is situated on the outskirts of the city, in the midst of a garden, which greatly enhances the effect of its architecture,—familiar, doubtless, to most of you. By the plan you will perceive that it is built in the form of a square. Entering by a portico of twelve Ionic columns, you arrive at a vestibule of chaste and simple character. The walls are in imitation of grey granite. On the frieze opposite the entrance is an inscription, that the "collection was formed and the building erected by King Louis." Over the door, on the left, is another to the honour of Von Klenze, the architect; on the right, another to the honour of Cornelius, the painter.

Passing to the left, you enter the halls devoted to the earlier specimens of sculptured art. The first of these is

The Egyptian Hall.—The walls here are stuccoed in imitation of deep yellow marble. The ceiling is ornamented with panellings containing enrichments in the Greek style, partly gilt, and relieved with rich colouring, the ground being principally white.

Only one part associates itself in style with the name of the hall, namely, the beautiful basso-relievo in a semicircular panel over the door—Isis discovering the body of her husband Osiris enclosed in a column,—symbolical of the birth of Art among the Egyptians,—and most beautifully rendered by Schwanthaler.

The Etruscan Hall is the next. Here the walls are stuccoed a deep red. The ceiling is a dome, with coffered panels richly ornamented, the ground being coloured, and the enrichments gilt. The floor in this and all the halls is formed of inlaid marble. Leading from this, you enter successively

The Halls of Ægina, Apollo, and Bacchus.—The walls of these three halls are all stuccoed in imitation of verd antique marble. The ceilings are tastefully ornamented with plastic enrichments, finished in white and gold, relieved in parts with colour. These ornaments are made to illustrate appropriately the name of each hall: in that of Apollo are the symbols of the four cities of Greece most renowned for art,—the Owl of Athens, the Pegasus of Corinth, the Sphynx of Sicyon, and the Wol of Argos.

The Hall of Niobe is the last of the series on this side of the building. The walls are polished stucco, in imitation of giallo-antico marble,—the ceiling white and gold.

We now arrive at the *Fest-saals*, or banqueting rooms—two noble apartments, intersected by a vestibule. They are not intended to receive works of sculpture, but rather as assembly rooms, grandly and ably illustrating all that inspired ancient artists, and originated their works,—rooms where the mind may be instructed and led to appreciate the relics of ancient art.

The first of these is called

The Hall of the Gods.—Here the painter, Cornelius, is the presiding genius: here he and his assistants have covered the ceilings and walls with a series of magnificent frescoes, illustrating the mythology and the heroes of Greece. Besides the pictures, are arabesques, combining with the subjects in delineating the seasons, elements, hours, arts, passions, &c., which it will be impossible for me to describe to you in detail.

The vestibule is painted with subjects of Prometheus and Pandora, showing their influence on mankind. From hence we pass to

The Hall of the Trojans—similar in size to that of the gods. Here the events of the Trojan war form the subjects of the grand frescoes, also painted by Cornelius, Zimmerman, and others: the arabesques, painted principally by Neureuther, assist in the illustration of the more important subjects. Leaving these magnificent apartments, we enter a series of halls containing specimens of sculpture of more recent date. First,—

The Hall of Heroes.—The walls are of greyish-coloured stucco; the ceiling being coffered, and finished white and gold, with blue in the grounds of panels. The next is

The Hall of the Romans.—This is the most richly ornamented of all the galleries containing sculpture. The walls are of stucco, in imitation of purple-coloured marble. The ceiling is arranged in three domes, separated by soffits, having octagon-shaped coffered panels, in which are gilt flowers on a red ground. The rest of the ceiling is elaborately ornamented with arasbesque enrichments in relief, finished in white and gold. The arched tympanums of the walls are also illustrated with bold arabesque ornaments.

The Hall of Sculpture, in coloured marble, and *The Hall of Modern Sculpture*, conclude this grand series of galleries. Here the walls of the first are light yellow stucco; of the last, light green. The ceilings of both are white and gold.

I have not dared to distract attention by alluding to the glorious works of sculptured art contained in these galleries; but I will call to notice the reasons of the architect, Von Klenze, for thus adopting the vivid colouring of the walls. He says, "Too great simplicity has prevailed in Italy and other countries in the treatment of museums, and the dull stony hue adopted does not at all suit ancient monuments: a certain richness of decoration is necessary, and deep colours should be used on the walls to make these antique statues appear to advantage."

THE PINAKOTHEK.

The pinakothek, or picture-gallery, is a long range of building, also designed by Von Klenze: it is of brick, with stone dressings in the form of the letter ⊨ laid horizontally. There is a colonnade on the south front, surmounted by a balustrade, on which is a series of statues of the most celebrated painters, by Schwanthaler.

The principal entrance is at the east end of the building: entering a vestibule of quiet style, you pass to the left up a handsome staircase, which leads to the Hall of the Founders, the first of the series of nine grand rooms, leading in perspective through the whole length of the building. These contain the larger paintings of this grand collection. They are all lighted from above, and are each 50 feet high and 40 feet wide, varying in

* Read at meeting of the Institute of Architects, Feb. 10.

length from 50 to 80 feet. The walls are hung with deep red or green silk, and the vaulted ceilings are highly enriched with ornaments in relief, finished in white and gold. The series of cabinets or small rooms on the north side correspond in style with the larger ones, and contain the smaller pictures. On the south is the grand corridor or gallery, so celebrated for its decorations, designed by Cornelius, assisted by Zimmerman, and painted by the best artists of Munich. This corridor runs the whole length of the principal suite of rooms, with all of which it communicates. It is divided into twenty-five compartments, and each of them is elaborately decorated with arabesques and paintings, illustrating the life of some eminent painter, or a particular period of art. The windows range on one side of the corridor, and on the opposite walls the panels are decorated. In the centre are painted the arms of cities celebrated for their encouragement of art, and I regret to say none of England are in the list: in the lunettes over these panels are painted the pictures containing the main subjects—to which the smaller pieces on the ceilings and sides bear reference: each ceiling is a dome, with four spandrils, and the linings of the arches between these domes are also filled with highly finished ornamental arabesques. The principal painting in the first compartment is King Louis, surrounded by the most eminent artists of Germany and Italy, and the other subjects illustrate the connection of the arts with religion. In the second is Giovanni Pisano, showing the design for the Campo-Santo at Pisa. On the ceiling are subjects from the crusades. On the third compartment is represented Cimabue's picture of the Madonna carried through the streets of Florence. On the fourth are incidents in the life of Giotto; and so on through the twenty-five compartments, which, while giving subjects in the lives of the most celebrated painters, illustrate the progress of the art itself.

The pictures in these ceilings are, I believe, painted in fresco, the ornaments in encaustic: the colouring is harmonious, rich, and beautifully contrasted.

I thought the decorations of the arches and the pilasters by no means equal in effect to the ceilings. The grounds are too bright, or at any rate the colouring of the arabesques have a washy appearance far from satisfactory. The designs, too, of the pilasters are somewhat clumsy.

LUDWIG'S KIRCHE,

or church of St. Louis, erected about twelve years ago, is in the Romanesque style, from the designs of Professor Von Gartner. It has a nave, aisles, transept, and choir; is of considerable size, and of elegant proportion.

The decoration of this church is different from any I have seen, from the neutral quality of the colouring employed. The grand fresco by Cornelius of the "Last Judgment" fills the entire wall at the end of the choir, being upwards of 60 feet high. The colours of this fine painting partake very much of ochery red and yellow, and it seemed to me that the decoration of the church had been calculated with reference to this fresco.

The general tone of the walls is a neutral fawn colour, and in the arches this with dull lilac are the principal tints employed, relieved by small portions of red. The arches near the wall have stronger colouring: here a geometrical pattern of green and red marks distinctly the form of arch, and on the face is an agreeable arrangement of white ornament on a chocolate ground bordered by green, separated by interlacings of blue and red. In the south transept, the arch is subdivided into compartments: in the principal one is a fine fresco of the crucifixion by Hesse: on the side panels are arabesques of a subdued character, and above are figures on a gold ground. The lower parts of the walls are mostly stencilled in geometrical patterns. The ceiling is vaulted and divided by intersecting rib mouldings, painted red, violet, and gold, with side margins in the neutral lilac and fawn. The ground of the ceiling is blue, studded with gold stars.

The most beautiful parts of the decoration of this church are the dome ceilings of the aisles: there are three of these on each side, and though perhaps to be criticised as to the particular style, yet they are very curious and elegant specimens of polychromy.

The floor of this church is laid with marble.

THE ALLER-HEILIGEN CAPELLE,

or Chapel of All Saints, is a building in the Byzantine style, by Leo Von Klenze.

The interior is magnificent; the whole of the ceiling and upper part of the wall being gilt, and almost covered with paintings. The general effect reminded me of the Duomo, at Venice. Though gorgeous, it has an air of solemnity and grandeur.

The ceiling is divided into two parts, in each of which rises a grand dome: in the one are painted subjects from the Old Testament, the Creator being in the centre: in the other is the Redeemer, surrounded by angels and the twelve apostles. In the spandrils of the arches are figures of the four patriarchs and the four Evangelists. The arch between the domes contains subjects connected with the Nativity, &c.: that over the altar has paintings representing the seven sacraments, surrounded by beautiful arabesques on a gold ground; and in that over the music gallery at the west end, are subjects of St. Cecilia, David, Isaiah, St. Luke, &c., also surrounded by ornaments.

The walls on the side have an arched form, and are painted with subjects of the sacrifice of Isaac, the crucifixion, &c. The choir terminates in an apse, on which is painted the figure of Christ surrounded by angels, and surmounted by the Father and the Holy Spirit: below is the blessed Virgin on a throne: beside her are St. Peter and St. Paul, Moses and Isaiah.

All these paintings are by Professor Hesse and his assistants, and are too well known to require from me any eulogy upon them. Framing these noble paintings, and forming the lining of the arches, is the ornament shown in my sketch: it is repeated as a bordering on every arch, and is the principal decorative ornament on the upper part of the chapel. It has a very beautiful effect, and contrasts and harmonises well with the gold grounds. The panels of the piers which support the arches are filled with rich Mosaic, which is introduced also in other parts unoccupied by paintings.

The columns supporting the galleries on each side of the chapel are of red marble, the capitals being gilt: the ground above these arches is covered with painted arabesque on a gold ground. The circles are the only ornaments in relief: the mouldings of the arches, and the cornice above, owe their effect simply to the contrasts of colour.

The floor of this beautiful chapel is inlaid with marble of various colours.*

JOHN G. CRACE.

* To be continued.

PAINE'S WATER-GAS FOR LIGHT, HEAT, AND OPERATIVE FORCE.

SINCE Franklin drew the lightning down from the thunder clouds of heaven, as a virtual initiative to all those scientific wonders of which electricity has since been the fruitful source, no subsequent discovery can boast of the importance that must now be conceded to that of another American, *should the result of his present pretensions prove to be as well founded as they now appear to be.* Foreseeing the probability of such a result, in July last, while venturing to anticipate a fact not then revealed, and offering a few hints to experimental electricians, the precision and importance of which the upshot, as we shall show, now singularly elucidates, we remarked that "a word to the wise in time may save *us*, at least, if not the Americans, from the private appropriation of so great and universal an idea under *patent* lock and key." These hints we hope the wise have not deemed themselves too wise to act upon; for the subject of them has already proved itself to be possessed of too tenacious and *une*phemeral a vitality to have been *nothing more* than a mere "nine days' wonder." Mr. Paine's main interest in his American patent has been sold, it is alleged, for more than a million sterling (?); the shares of the company to whom it was sold are at a high premium; the States are rapidly purchasing licenses to begin; and, lastly, the dreaded patent to prevent *us* from having the free use of a power which has such highly feasible pretensions to be one of immense and universal interest and importance, not only in the production of light and heat, but of motive power inclusive,—has already been secured,—at least until disputed, if it effectually can be so; and, considering the profit already derived by the original patentee, and the fair field already occupied in America by his assignees, we can see no injustice in an earnest hope that they *may* have their patent here effectually disputed. Failing any successful attempt amongst our own more able electricians, however, to forestall such a patent, it may be a question whether the date or circumstances of an alleged realisation of the same idea in France before the British patent was secured, can be brought successfully to bear upon the latter.

The evidence in favour of Mr. Paine's pretensions is now very strong. The editor of the *Boston Chronotype* says:—

"What we have seen enables us to state, not only that Mr. Paine has extorted from nature the secret of the artificial production of light at a nominal cost, but that he has got hold of the key which unlocks and enables him to command a new force of nature, which is soon to supersede most of the forces now employed—something which is destined to work a revolution both in science and art."

And, in allusion to the *report* by certain engineers, which was believed, both here and in America (but not by us,—see vol. viii., pp. 440 and 586,—though just as wide awak to Yankee long bows as our neighbours), to have completely extinguished these pretensions, the editor adds:—

"*We have seen for ourselves, and find that we have done Mr. Paine very great, though not intentional, injustice.* And we can hardly find words to express our surprise at the scientific report which was partly the cause of our doing so. The demonstration which Mr. Paine then presented could not have been of a doubtful character to *chemical* eyes. These gentlemen must have understood and believed more than they reported."

According to the *Patent Journal*,

"Mr. Paine claims, among other things, to have discovered a means of increasing the power of a magneto-electric machine to such an extent that he can decompose water rapidly with it; that he can take a jar of water, and, by means of the electricity induced by this machine, can convert *the whole of it into hydrogen gas*, without the production of any *oxygen* whatever. He claims, also, that *by changing the electrical poles* he can convert *the whole of the jar of water into oxygen gas*, without producing any *hydrogen*; that, after producing the hydrogen, as above, and passing it through spirits of turpentine, it becomes *catalized*, and then will burn with a clear and brilliant flame, and this, too, without any loss to the turpentine by the passage of the gas through it. In regard to LIGHT, independent of the other applications of the power, Mr. Paine claims to have discovered a means of producing it from water, by electricity, at a cost infinitely less than any mode now in operation."

As to this "changing the electrical poles," we must here further explain that it now appears that when hydrogen is wanted the *negative* wire must be made continuous and free to act, while the *positive* is *interrupted* by means of a small glass of water, into which the broken or separate sections of that wire are dipped without contact. On the contrary, when oxygen alone is required, the *positive* wire must be continuous, and the *negative* interrupted. When both oxygen and hydrogen are to be eliminated, as in the ordinary magneto-electric machine, both wires must be continuous or neither interrupted.

"I asked Mr. Paine," says the writer of the article just quoted, "why he interrupted the *positive pole* by the glass of water?—why he cut this wire in two, and placed the ends in the glass of water? He said that, unless this were done, *both hydrogen and oxygen* would be generated in the bell glass; but that by this means he only obtained the hydrogen. There appeared to be no oxygen generated by the operation." "According to Mr. Paine," says Dr. Foster, in the *Scientific American*, "oxygen is composed of one gas and *positive* electricity, and the

same gas *is* hydrogen when combined with *negative* electricity."*

Now, although it is not our practice to "halloo before we are out of the wood," so impressed are we with a persuasion that Mr. Paine's pretensions are well founded, that we think it worth while, as a mere act of justice to our own penetration, and as a corroboration of the probabilities in favour of these very pretensions, to revert to what we anticipated on these same points in July last, when the whole subject was designedly enveloped in mere mysterious hints and indefinite obscurity:—

"We will venture to anticipate that if Mr. Paine have really tested and proved the truth of Macvicar's idea of the constitution of water, as resolvable into hydrogen, it must be by *negative* electricity (the singular affinity of which to the radiant actinism of the solar ray we have already noted in the THE BUILDER) that he eliminates the *hydrogen*. A word to the wise in time may save *us*, at least, if not the Americans, from the private appropriation of so great and universal an idea under *patent* lock and key. And to this end we would further hint that by connecting the whole series of zinc plates in a galvanic battery with a separate and isolated trough containing sulphur, a high electro-*negative*, we long ago obtained decided manifestations of electrical action in the clustering of the sulphur round the single pole or wire communicating with the series of zinc plates while the ordinary galvanic circle was closed and the trough in action. Other pursuits prevented, as they still do, any further investigation of this peculiar train of experiment, but it seems to bear on the subject."

Here we not only distinctly anticipated the precise agency, namely, the negative force of electricity, employed by Mr. Paine in the elimination of hydrogen from water, but made a bold dash at the *modus operandi*, by showing how we had, on one occasion, endeavoured to obtain the operation of *the negative* so far separated from the usual circuit.†

Moreover, in another passage (vol. viii. p. 357) we further remarked that "it will probably be found that not only the electric force, but the magnetic also, is at work in the composition of both oxygen and water, and that hence *the diamagnetic force* no less than *the actinic or at least electro-negative* must be brought into play in their demoleculisation or decomposition." And we are now confirmed in that opinion by the nature of Mr. Paine's machine.

On the principles or leading ideas whence we derived the possibility of anticipating such discoveries, and which ideas, by virtue of such possibilities, become themselves of practical importance, we may have something further to say; but in the meantime we must conclude our account of Mr. Paine's invention. This we will do as briefly as possible in the words of those who have witnessed its alleged astonishing operation.

"The apparatus consists of four pieces, all placed upon a pine table or shelf, and in no ways connected with anything else.

First—A common magneto-electric machine, consisting of two permanent horseshoe magnets, about *twelve inches* long: these were placed horizontally on a mahogany frame, about *four* inches apart, one being placed above the other. Between the ends of these magnets were a pair of *helices*, and these so attached to a wheel above that they could be set into a rapid rotary motion. The peculiar construction of these helices, from which the immensely-increased power is said to be obtained, I will hereafter describe.

Second—A large open-mouthed glass jar, capable of holding twelve quarts: this was a little more than half filled with water. (We tasted the water, to satisfy ourselves that it *was* water.) Within this jar was placed a common bell glass, open at the bottom, and reaching within four inches of the bottom of the large jar. The top of the bell glass was closed tightly with a brass cap, which extended over it, so as to rest upon the sides of the outer jar. Passing through the cap of the bell glass were two wires, which extended nearly down to the bottom of the bell glass, aud these terminated in a circular metallic box, 1½ inch long, and 1 inch in diameter: this box was hollow, and perforated with small holes in the upper part. The *electrodes*, or points of connection between the poles, were in this box.* The water in the jar and bell glass reached some 6 inches above the electrodes.

Third—A quart glass jar, half filled with spirits of turpentine: a tube or gaspipe passed from the top of the bell glass above mentioned, and into this jar of turpentine, terminating at the bottom of the turpentine. From the cap which covered the jar of turpentine, another tube or gaspipe passed to a jet or burner about 12 inches from the jar.

Fourth—A common glass tumbler, half filled with water.

The above comprised all the apparatus used by Mr. Paine, with the exception of three wires, or rather flat strips of copper, by which he connected the magneto-electric machine with the jar of water."

The use of the glass of water, and the arrangement of the wires, we have already indicated. In respect to the helices, it is said—

"Mr. Payne claims that by an improved construction of the helices in the magneto-electric machine he has improved the power of that instrument infinitely, say *ten thousandfold*, sufficient to produce the wonderful results above described. The peculiar construction of these helices was shown to us, and explained. Before describing them I should make a remark respecting the *ordinary* helices of a magneto-electro-machine. It is well known that the power of a magneto-electric machine, with the ordinary helices, up to a certain point, depends *upon the amount of surface of insulated copper wire in the helices*. It is only upon the *surface* of this wire that the electricity can be conducted. Mr. Paine's helices differ from the above in this, that the wire which forms the coil is *made hollow*, being formed by twisting or winding very thin strips of copper, *forming it into a tube*. This wire or tube is then covered with India-rubber or gutta percha, to insulate it, *and then filled with water*. This water within the wire, forming the helices, is so arranged as to be brought in contact with the current of electricity induced from the magnets—in the same manner as the wire that surrounds it. Faraday has established the fact that a very small quantity of water is capable of containing a vast amount of electricity—I think he says that a single drop of water will contain as much electricity as a thunder-cloud—sufficient to burst off the gable end of a house. Just in proportion as the power of the helices is increased to *induce* or *receive* the electric current, so is its power increased to give it off. . . . The experiments which we saw, and in which I think we *could not* be mistaken, would go to show the claim of Mr. Paine to be well founded."

PROFESSOR COCKERELL'S FIFTH LECTURE ON ARCHITECTURE.

THE great architects of Greece, great as they were in the practice of the art, were not content without a knowledge of the theoretical laws. The Italians, who followed, were satisfied with practice and precepts, without theory. Through Vitruvius we learn that the Greeks well understood the utility of this course of study, particularly of symmetria, notwithstanding the confusion of his uncultivated mind, where he sometimes appears as if in borrowed plumes. Dr. Johnson is not very clear in his definition of symmetry. According to the Greeks it had a double signification; firstly, like the proportionate size of the arms and legs to the human body; and, secondly, commensuration, —a principle, by the bye, no less remarkable in Greek art than in Gothic. Commensuration is the great feature of the building for the Exhibition in Hyde Park: we all know that every proportion in it is a multiple of eight. The profession, said he, had the opportunity the day before this lecture of being present in the interior of the so-called Crystal Palace, when the noble, the wealthy, and the learned of the United Kingdom—the members of both Houses of Parliament—were present. Their admiration of the symmetrical was great, indeed: it was the commensuration of great numbers of similar forms that gave delight (and he mentioned this with the highest respect) to their common eyes! William of Wykeham especially formed his designs for the ground plans of the edifices he erected upon the equality of spaces, or multiples of them, as he exhibited diagrams illustrated.

Eurythmia, the good rythm, or harmonious proportion, was the next great element of architectural design to be studied. Symmetry may be defined as the parity of parts; commensuration, the exact proportion of parts to each other, or symmetry of quantities. Eurythmia, or proportion, is evident, especially in the Greek profiles of entablatures, as the examples exhibited proved, where the elegant and chaste union of curvilinear with straight lines was productive of the greatest beauty. The human form was the finest example in nature for commensuration, a man with his arms extended being exactly the same in width as his height. Vitruvius, in his third book, says, the human form divine is all perfection. In the lower animals there is no such proportion, as may be observed in the baboon. There may be cited three kinds of form in man, as the tall, the robust, and the middling, each of which possessed a peculiar beauty in itself, and in all ages, these three types have been admirably employed in ancient art to a suitable indication—but now a day, we cannot

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* In order to make this intelligible to readers who may not have perused what we have already said on the subject in former numbers of this journal, we must here quote from a note by us at page 327, vol. viii. (13th July, 1850):—"We have learnt that Mr. Paine, the alleged discoverer or inventor of the process, holds some peculiar ideas on the constitution of water. If we understand it aright, he regards water as an element, at least as much as the oxygen eliminated from it, and alleges that *either* oxygen *or* hydrogen may be so eliminated, as either may be desired, by special electrical action. If such be Mr. Paine's idea, and if so wonderful a result have really been obtained by acting on such an idea, we must claim the original merit of that idea for a fellow countryman, Macvicar, of St. Andrews, who, at least twenty years since, wrote a curious treatise on chemistry, based on this and other original principles. Hydrogen, according to Macvicar, is the most elementary of all substances except "radiant matter" (and in this, indeed, Davy himself appears to have to some extent concurred). The form of its atoms or particles is the most elementary or simplest as well as most active of all possible corporeal forms, namely, the tetraedron. Oxygen, water, and all other substances are composed of these tetraedra united by electrical affinity in various modes and numbers, constituting composite or quasi-elementary atoms or molecules. Water, then, is either solely hydrogen (when entirely resolved into an elastic medium of tetraedra), or partly hydrogen and partly oxygen (when some of these hydrogenous atoms remain in the closer conjunction constituting the oxygenous nature). *Outré* as such ideas may appear to a mere exoteric chemist, we have heard Macvicar spoken of most respectfully by a chemist of celebrity in his day, and himself a respected correspondent of Davy and Faraday, namely, Kemp." We may hereafter take an opportunity of quoting Macvicar himself on this point.

† We are perfectly aware of the doubts entertained by some of the soundest and most able electricians, whether it be at all possible, by any means whatever, so to separate the negative from the positive, or in any way to obtain the paramount operation of the one, even with the crippled or diminished operation of the other. The great importance of the question, however, is admitted on all hands, as will appear from the following remarks on this subject by Dr. Faraday himself,—the prince of electricians,—who thinks it "impossible to assume a current of positive or a current of negative force *alone*—[note here, however, that in Mr. Paine's *break of the circuit* we cannot be said to have *either* force *alone*, but only either *paramount*,—a modification of Dr. Faraday's *impossibility* which would have reconciled it so far with Mr. Paine's alleged fact, had not the doctor gone on to say]—or of the two at once, *with any predominance of one over the other*;" yet he believes that "the establishment of this truth, if, as I think (he says), it be a truth, or, on the other hand, the disproof of it, *is of the greatest consequence*"—("Experimental Researches in Electricity," p. 519). "If, as a first principle," he adds, "we can establish that the centres of the two forces, or elements of force, never can be separated to any sensible distance, or at all events not further than the space between two contingent particles, *or if we can establish the contrary conclusion*, how much clearer is our view of what lies before us, and how much less embarrassing the ground over which we have to pass in attaining to it, than if we *remain halting between two opinions*. And if with that feeling we rigidly test every experiment which bears upon the point as far as our prejudices will let us, instead of permitting them, with a theoretical expression, to pass too easily away, are we not much more *likely to attain to the real truth, and from that proceed with safety to what is at present unknown*? I say these things *not, I hope, to advocate a particular view*, but to draw the strict attention of those who are able to investigate and judge of the matter *to what must be a turning point in the theory of electricity, to a separation of two roads, one only of which can be right*. . . If a unipolar body *could* exist, *i. e.* one that could conduct the one electricity and *not* the other, *what very new characters we should have a right to expect in the currents of single electricities passing through them!* and how greatly ought they to differ not only from the common current which is supposed to have both electricities travelling in opposite directions *in equal amount* at the same time, but also from each other!" Is it not to be deeply regretted, whatever be the merits of Mr. Paine's discovery, that such a man as Faraday should have seen reason *to believe* in the *merely negative* conclusion that such a power of using at least a predominance of the one force was impossible?

* In respect to these, and once for all to the operative result of the whole, we may here quote from the *Boston Chronotype*:—"The power of this simple arrangement to evolve electricity is tremendous. The electrical force compared with the mechanical cause is like that of the rush of water which carries the wheel of a great cotton factory compared with the effort of a child who may hoist the gate. At each discharge of the helices, and there are many in a second, according to the rapidity, an abundant crop of gas bubbles is produced; and this, owing partly to the peculiar construction of the electrode, or form of the poles where presented in proximity to each other in the water of the jar. This electrode is a point of great interest, and it is just at this point that the mighty and mysterious fluid, so potently commanded and propelled by helices, may prove too big for its business, and show its relationship to the favourite weapon of Jove. Here is a stupendous difficulty which has tasked the courage and inventive genius of Mr. Paine—a difficulty of which the public could not be aware, and which seems to account for much delay. He has tamed the thunderbolt in this delicate point, at least so far as to ensure perfect safety with due care. Other safeguards may yet be added. However, it is but right to say, that it would not be strange if carelessness and temerity should hereafter meet with a fate here that will be a caution to all."

have any figures from the pencil of our historical painters, unless they are six feet in height. The bull, the horse, and the antelope, presented three varying types of animals, each admirably adapted to its habits. This conception of the tall, the robust, and the middling, was eminently important in architectural forms, as adapted for proportion or eurythmia. The Italian architects never discussed this view, but they verified it in practice, as may be particularly observed in the works of the great master Palladio.

The different dimensions of apertures regulated by the five orders, as seen in the diagrams, were worthy of the student's attention, although seldom discussed. In these five openings were the sentiment of the tall, the middling, and the robust. The arches of the Coliseum were singularly wide, but the great length of the building diminished what would have been ugly and offensive in a narrow edifice, to a great beauty of proportion. The building at the corner of Moorgate-street and London-wall was remarkable. In the quadrate form of the elevation a very tall and narrow doorway was placed, displaying an utter want of proportion and loss of dignity. Nottingham Castle, although a low building, possessed great dignity from the quadrate form of the spaces and windows. James Wyatt has given a good example of this effect in the powder magazine on the banks of the Serpentine, in Hyde-park. Tall lancet examples done in little is a departure from this principle: you cannot have dignity with the tall form in little, it must be quadrate to produce it. In porticoes Vitruvius gives the dimensions dogmatically, solely from practice, without any theory. The Italian scholiasts, as we may call them, have left us works every way useful to be quoted, as those by Raffaelle, Peruzzi, Vignola, and others. It would be a desirable study to discover, if possible, the secrets of their proportions—secrets only to be acquired by the study of their logical deductions: it is these secrets which are the wonders of Greek architecture. The secrets of Palladio's lightness, grace, and naturalness, appear to be the union of an inferior or lesser order with a larger one, the proportion of the lesser one being two-thirds that of the larger. This is the great feature of Palladio, a name profound and prodigious in architecture. Vignola's secret depends less on columnal gradation than in the gradation of windows, which are mostly small in comparison to his masses, as much as one to three or four. He employed larger entablatures than any previous master, and gave to all his buildings an appearance of massiveness and strength. The works of Raffaelle are distinguished for order essentially, and for great energy. He often placed the orders on pedestals, both in his buildings and in his pictures. In apartments where columns are employed they very appropriately stand on pedestals, as when filled with company the columns are seen with their bases complete. Sansovino is a master greatly to be respected: we always must admire his *chef d'œuvre*, the library at Venice, where his secret appears to be his having placed an entablature above the second order, making the frieze enormous. The study of all these will expand our ideas and enrich our works. It is only a recent discovery that the Greeks did not place the axis of the columns perpendicular: by the slight inclination inwards they form a natural buttress. In all architecture this system must be observed.

According to Aristotle, magnitude and grandeur are the chief ends of architecture. This does not consist in dimension: for example, in St. Peter's, at Rome, the cherubs sustaining the piscina appear but of the natural size: when you come near them, you discover their colossal magnitude, weighing many tons. Is not this labour thrown away, without producing any result? The same applies to every part of St. Peter's: if the interior had been lower, it would have augmented the dignity: it is so lofty that it becomes small, though really vast. Longinus says, the worth of art is its skill in proportion. Therefore we are not to be discouraged by small buildings, for we may achieve great triumphs in art on a small scale. In conclusion, I impress upon you that when you hear of a great reputation in art or science, you should put faith therein: seek for their secrets, and the labour will reward you.

DOCTORING DAMP WALLS.

This task seems to have sorely puzzled many of your readers, and I must confess that the receipts given to remove the evil are not satisfactory to my mind. Superficial linings, washes, coatings of "*grease* butter," cement, or asphalte, cannot fully answer the required purpose, because they are laid direct upon the wall or walls which are acknowledged damp.* To line or cover one side of a wall in the way named, is only to place it in a condition to become permanently more damp; as the wet which "sweats" at the exposed surface, and is evaporated, is retained beneath the impervious surface laid on, having no means of escape. In "this mottie, misty clime" of England, damp walls are very common, and as is well known, they are not merely disagreeable, but they are positively dangerous to health, and most destructive to fittings and furniture. To "batten" walls with timber, the usual practice in all good houses, is to make the best possible arrangement for rot and decay. Hollow walls, formed out of ordinary stone or brick, also in a measure fail, although a well-constructed hollow brick wall is in every respect to be preferred before timber battens. But to cure existing walls by means of a lining wall of common bricks, leaving an inner air space betwixt the old and new work, would be not only most costly, but in many instances destructive of small rooms. The remedy I have to propose is a lining of hollow tiles or bricks, which need not occupy more than three inches in thickness of space, and yet when completed secure a dry inner surface. The tiles or bricks may be made by any ordinary field-tile machine, and they may be burned in any tile-kiln. The tiles need not be more than one quarter of an inch thick. The machine will make them of any sectional form. They would probably work best 12 inches long by 6 inches wide, and 3 inches deep, with one partition down the middle. Tiles or bricks of this kind may be made for 20s. or 25s. per 1,000, and 1,000 would cover 500 square feet of wall. They may be set in cement either vertically or in horizontal courses, and, where necessary, they may be secured to the solid wall by iron cramps or "hold-fasts." With good cement these, however, will not be required. The inner face of the hollow tile may be plastered as on ordinary brickwork. The "die" in the machine may, however, be made to score or groove the external surfaces of the hollow tiles so as to afford better hold to the cement and plaster.

The plan of doctoring damp walls now proposed is certainly as old as the Romans, and therefore, has "precedent" in its favour. The Rev. J. C. Bruce, in his great work, just published, upon the "Barrier of the Lower Isthmus," *the Roman wall*, which extended from the Tyne to the Solway,—at page 77, states:—

"Pipes of lead are occasionally met with in the ruins of the stations, and pipes of burnt clay are of very frequent occurrence. . . . . They are not found in the wall, but on the site of the stations. One use to which the tile-tubes have been put, has been the transmission of warm air throughout an apartment: *the walls of one of the chambers of the 'baths,' at Hunnum, were lined with them.*"

Now that the duty on bricks has been removed, we may surely emulate the Romans in the use of hollow bricks and tiles for purposes of dryness, ventilation, warmth, and endurance. Partitions, floors, and ceilings, may be constructed of hollow bricks, perfectly fireproof, free from liability to rot, or to decay by worms, and be as light as if made of timber in the ordinary way, or even lighter. Where there is a subsoil naturally damp, hollow bricks may be laid beneath the floor, so as to secure perfect dryness; and means may also be taken to prevent annoyance from insects.

Robert Rawlinson.

* By reference, our correspondent will find that the scope of our own extra-professional article, "on *doctoring* damp walls," was expressly restricted, with a reservation in favour of more thorough measures, and also with a reference to these as having been already professionally discussed in our columns.

THE WINDOW-TAX AND TIMBER DUTIES.

The removal of the tax on light and air, as proposed by Sir Charles Wood, will, in a sanitary point of view, do good, though fiscally he is merely taking it off one shoulder to lay it on to another by the imposition of a house tax, to which, moreover, we have other objections, as our readers are aware. The window tax will be totally repealed, but on the following erroneous compensatory conditions:—All houses not now paying window-tax, but of the annual value of 20*l.* or upwards, to pay two-thirds of the lowest window-tax, viz., 12s. All of the annual value of 20*l.* and upwards, now paying window-tax, to pay two-thirds of the amount now paid for window-tax. New houses to pay at the rate of 1s. in the pound on their annual value; but if they be occupied as shops, public-houses, or farm-houses, 9d. in the pound only. Should this arrangement be insisted on, all the old houses will soon be tenantless.—It is further proposed to reduce the duty upon foreign timber to one-half the present duty. At present the duty on sawn timber is 20s., and on hewn timber 15s.; the Chancellor therefore proposes to reduce the first duty to 10s., and the latter to 7s. 6d.

DURABILITY OF DRAIN PIPES.

Having recently seen in The Builder some remarks on the efficiency and durability of tubular drains, will you allow the few following remarks a corner in your valuable paper? First, their durability; and this will in some measure involve their efficiency. In deep drainage I need not say both should be made a matter of certainty on account of the expense incurred, more than when they lie nearer the surface. I am led to this remark by having been recently called upon to examine part of a deep drain which had become inefficient from some cause, when I found, on removing the ground, the pipes were fractured the whole length of the shaft, namely, 12 feet. I mention the shaft because being a long drain, part was tunneled, and I have no doubt, had the whole been opened, it would have been found the same throughout, that is, in the different shafts: this leads me to doubt their durability, and also their efficiency in their present form; and if I am asked why, I answer,—their form is one objection, they have one end, namely the socket, sufficiently strong in appearance and in fact, so if some mode were contrived to make the other equally so, and the middle strengthened by a band or hoop so as to resist pressure, this would cost a little more, but I think the advantage would be more than commensurate to the cost. Why may they not be so formed as to drop into each other, so as not to disturb more than the one broken. The manufacturers should see to this. Cheap things in name are not always so in fact.—A Clerk of Works.

THE GREAT HOSPITAL, MILAN.

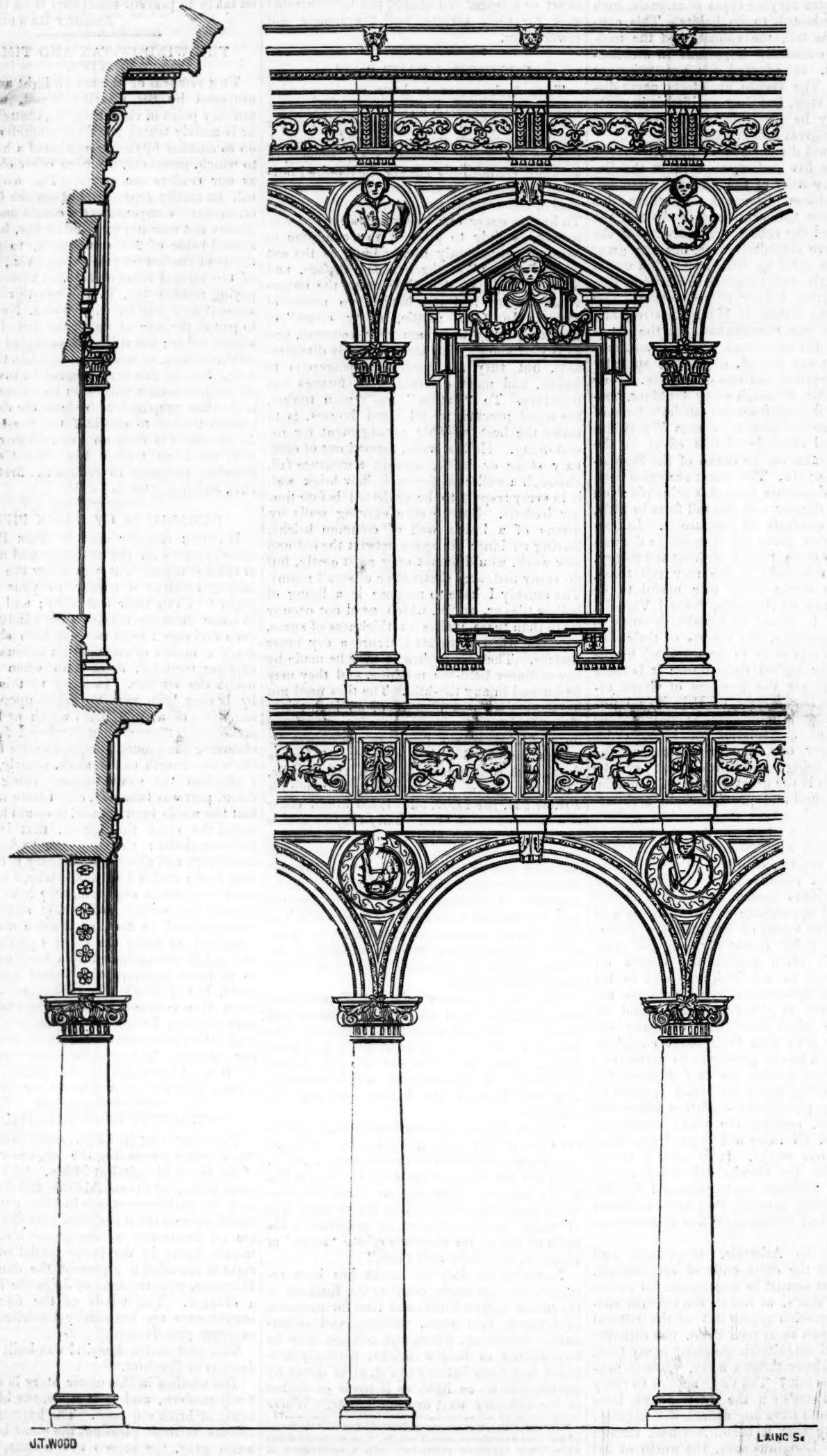
The engraving (p. 122) represents one bay of the arcade surrounding the large centre court of the Great Hospital at Milan. The columns are of stone, but the entablatures and the arches, with the enrichments, are in terra cotta. The half-figures in the medallions over the columns are all illustrative of Scriptural history: the female figure in the lower medallion to the right is intended to represent the daughter of Herodias, with the head of John the Baptist in a charger. The whole of the figures and enrichments are beautifully modelled, and in excellent preservation.

This part of the hospital was built from the designs of Ricchini.

The window in the upper story is comparatively modern, and is of stone, the blank wall being of brick stuccoed. The harmony of the colours is most pleasing, the stone being of a warm gray, the stucco raw Sienna, and the brickwork a quiet unobtrusive red.

J. T. W.

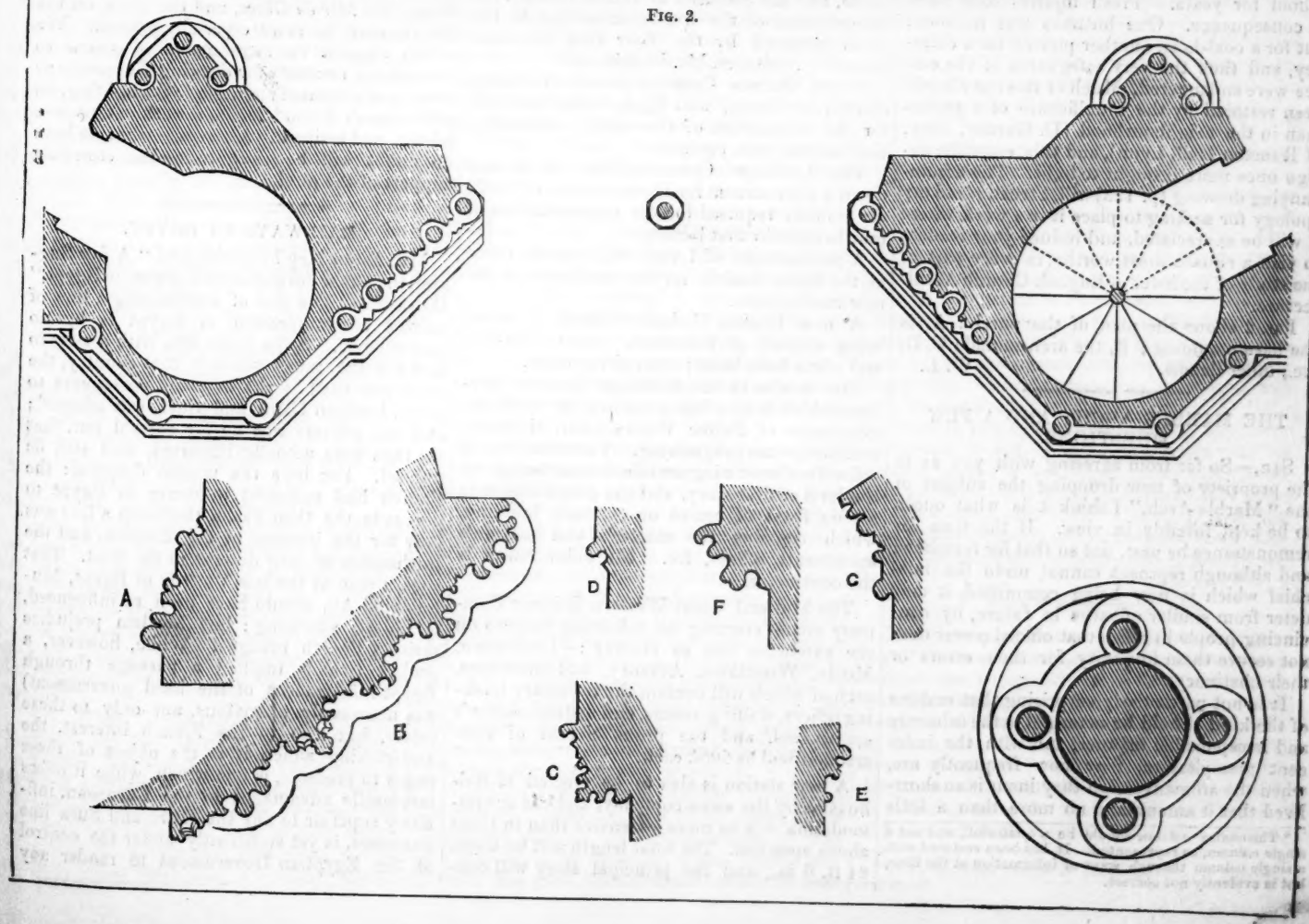
THE GREAT HOSPITAL, MILAN.



J.T.WOOD LAING Sc

EARLY ENGLISH DOORWAY, WEST WALTON CHURCH, NORFOLK.

FIG. 2.



EARLY ENGLISH DOORWAY, WEST WALTON CHURCH, NORFOLK.

In the flat district between Lynn and Wisbech are situated several villages, which have remarkably fine churches of various characters and ages. The lover of ecclesiology will find a rich treat in the examination of them. They are very large, and present in their varied forms much that is very admirable.

Walsoken is a fine specimen of Norman Transition; West Walton, a magnificent Early English church, with detached campanile; Torrington St. Clements, a large cross church, decorated, with very extensive perpendicular alterations, and a detached tower at the west end; and, lastly, Walpole St. Peter's, a most elegant Perpendicular church, remarkable for its beauty, and the elevation of its altar on nine steps. The particular object, however, of this letter is to explain the drawing that accompanies it of a door of extraordinary beauty, and which may be called a discovery of the rector of West Walton church, three miles from Wisbech. It is the western door. It seems originally to have been admirably designed, and carried out with all the care and cost that has often been expended upon our larger churches. The western end of the church consisted formerly of this fine door, and probably a large window of two divisions, and a quatre-foil in the head of it, over it, and between two octagonal towers, ornamented with arcades, and finished with spires. At either side were small low aisles, which, having been much raised and extended, have much injured the general effect, and totally destroyed the architect's design. The angular turrets seem to have sunk westward; and two very large buttresses, 4 feet thick and 10 feet deep, were placed against them to prevent their falling. This, a sufficiently miserable expedient to save rebuilding, led to other and worse consequences: a lean-to roof was placed over the door, and the ends of the buttresses bricked up, and thus a wretched damp room was created in the place of the splendid portal. A ceiling being added internally, cut off much of the upper portion of the arch: the piers at the sides were bricked round: the centre was deprived of its shaft and arches: the whole was bricked up from the church: the pavement was raised; and, lastly, the parish children were placed in it, and it was used as a school for years. Fresh injuries took place in consequence. One buttress was hollowed out for a coal-hole, another pierced for a chimney, and thus the very safeguards of the edifice were endangered. Much of this has already been restored by the munificence of a gentleman in the neighbourhood (D. Gurney, Esq., of Runcton Hall, Lynn), and this exquisite design once more brought to light. The accompanying drawing (p. 123) will, I trust, plead my apology for seeking to place it in a work where it will be appreciated, and induce your readers to visit a church most worthy, in every part, of the study of the lover of English Church Architecture.*

Fig. 2 shows the plan of the porch: A, is the base moulding; B, the arch-mould; C, D, &c., other details. W. L.

* The centre column should be a quatrefoil, and not a single column, as represented. It has been restored with a single column through want of information at the time, but is evidently not correct.

THE MARBLE ARCH; AND A FEW QUESTIONS.

Sir,—So far from agreeing with you as to the propriety of now dropping the subject of the "Marble Arch," I think it is what ought to be kept forcibly in view. If the time for remonstrance be past, not so that for reproach; and although reproach cannot undo the mischief which is now being committed, it may deter from similar offences in future, by convincing people in office that official power does not secure them impunity for their errors or their obstinacy.

It is not particularly surprising that matters of the kind should be managed in the arbitrary and irresponsible manner, and with the indecent precipitation, they now frequently are, when the animadversion they incur is so short-lived that it amounts to no more than a little "flash-in-the-pan" grumbling. If public opinion in such matters would be respected and treated with deference, it should show itself more firm and energetic, and take things far less quietly than it now does.

With regard to the "Marble Arch," one or two questions arise, to answer which at all satisfactorily would, perhaps, perplex the noble lord who has the credit of having fixed upon the new site for it. Had he duly taken into consideration the various suggestions made from time to time for other sites, almost any one of which would have been greatly preferable to the one now actually pitched upon? If he really did do so, why have we not been apprised to that effect, and informed on what grounds every one of them was objected to? Or are we to suppose that neither his lordship himself, nor any one about him, was at all aware that any suggestions of the kind had been made, not having even so much as inquired whether such were the case or not? Another somewhat disagreeable question is: was the site after all—after the length of time that the removal of the arch from the front of the palace was foreseen as indispensable—determined upon only at the very last moment, and in such a hurry that it was utterly impossible to give us other warning of it than that afforded by the preparations for re-erecting the structure? If such were really the case, the precipitation may very well account for the blundering; but what is to account for the precipitation? Not at all more satisfactory is it, if we suppose that the choice of actual site was not a hurried one, but on the contrary, the result of deliberate and careful consideration; for the question then is, wherefore have we not been properly assured that such has been the case? and why should there be so much of suspicious mystery kept up in matters of art and taste, when those of far greater importance to the country at large are freely disclosed—perhaps more compulsorily than voluntarily—as well as reported and commented upon? With this last question as my final one, I am, Sir, yours, &c.

Zeta.

NOTES OF ARCHITECTURE IN IRELAND.

The Board of Guardians of the Granard Union have decided upon erecting an additional building to the male side of the workhouse, and are prepared to receive tenders for the execution of the works, according to the plans prepared by the Poor Law Commissioners. Architect, Mr. Wilkinson.

A new Roman Catholic church is being erected at Ennis, and funds being required for the completion of the work, a subscription list has been opened.

The Drainage Commissioners have sent down a presentment for Ennis Assizes of 138*l.*, the amount required for the reconstruction of four bridges in that locality.

A presentment of 1,400*l.* will also be made at the Ennis Assizes for the enclosure of the new court-house.

A new Roman Catholic church is about being erected at Irishtown, county Dublin, and plans have been prepared for same.

The works at the Mullingar Lunatic Asylum, which is now being erected by the Commissioners of Public Works,—Mr. Mulvany, architect,—are progressing. The corridor and cell walls of west wing are raised some feet above the level of first story, and the plinth course is set on front of centre or entrance building, which contains the master's and matron's apartments, offices, &c. Mr. John Smith is the contractor.

The Midland Great Western Railway Company intend erecting the following stations on the extension line to Galway:—Castletown, Moate, Woodlawn, Athenry, and Oranmore, each of which will contain the necessary booking offices, waiting-rooms, and station-master's apartments, and the probable cost of their erection will be 600*l.* each.

A new station is also to be erected at Ballinasloe by the same company, and the accommodation will be more extensive than in those above specified. The total length will be about 84 ft. 6 in., and the principal story will contain the following apartments:—A porch, 11 ft. by 9 ft., communicating with ticket-office, 14 ft. 10 in. by 9 ft.; first and second-class waiting-room, 16 ft. 10 in. by 13 ft., which is entered from platform by doors 4 ft. 6 in. wide; third-class waiting-room, 20 ft. by 13 ft.; ladies' room, 13 ft. by 11 ft.; porters' and master's entrances, urinals, &c. The basement story contains apartments for the station-master, consisting of a parlour, bed-room, and kitchen, 15 ft. by 9 ft. 10 in. each; also a porters' day-room of same dimensions, tank-man's rooms, lamp-room, stores, &c. The front elevation consists of a central porch, with flat arched opening, 7 ft. wide by 3 ft. 9 in. high, surmounted by a gable, with oriel window in centre, which lights porters' bed-room. At either side of this porch are diverging passages (4 ft. 6 in. wide, leading to waiting-rooms), with windows therein 3 ft. 6 in. wide, and 4 ft. 3 in. high, divided into two compartments. The waiting-rooms are lighted by windows 5 ft. 3 in. wide, by 5 ft. 6 in. high, divided into three bays: a balustrade, 3 ft. 6 in. high, encloses front and sides. The cost of erecting this station will be about 1,500*l.* Messrs. Cockburn and Son, of Dublin, are the builders. Mr. Dargan, the contractor for the works on the extension line, has entered into an agreement with the company to have the line open to Galway on the 1st of August, and the works are being executed with all possible expedition.

A new town-hall is to be erected at Cork, and tenders are being received for a suitable site.

MR. MARSHALL'S DIORAMA OF A TOUR THROUGH EUROPE.

The diorama painted by Mr. Charles Marshall, assisted by Messrs. J. M. Wright, Dukes, Keene, and Andrews, and which has been opened at her Majesty's Concert-room, Haymarket, represents an enormous extent of country—Hamburg, Berlin, Vienna, Pesth, Constantinople; then Rome, Venice, Milan, and the Rhine country, are all included and made prominent resting-places. Without, perhaps, fully equalling the expectations we had formed, from knowledge of Mr. Marshall's fine efforts on the stage of her Majesty's theatre, it is a beautiful and interesting work, and should be visited by all. The Walhalla by moonlight, the Ducal Palace and Library at Venice, the Snow Storm, the gradual appearance of Mont Blanc, the *Mer de Glace*, and the Pfalz, on the Rhine, may be more especially praised. We would suggest the introduction of means to prevent the necessity for drawing the curtain so often, and increased attention to the lighting, on which much depends. It is a work of immense labour, and eminently deserves,—what we have no doubt will be given to it—the crowding support of the public.

RAILWAYS IN EGYPT.

Mr. Aston Key has published "A few Suggestions on the Formation of Railways in Egypt." He says,—"The idea of establishing a line of railway communication in Egypt is by no means novel. Some years ago, with a view to facilitate the transit through that country, the route now used by the overland passengers to India, between Cairo and Suez, was adopted; and the scheme was so far carried out, that the rails were actually imported, and still lie unused. For here the project dropped: the French had sufficient influence in Egypt to persuade the then Pasha that such a line was only for the interest of the English, and the furtherance of their designs in the East. That such a man as the late Viceroy of Egypt, Muhummed Ali, should have been so influenced, is indeed suprising; but Moslem prejudice assisted French intrigue. While, however, a project (which implied a passage through Egypt independent of the local government) was necessarily obnoxious, not only to these rulers, but also to the French interest, the undertaking which it is the object of these pages to promote, is one which, while it offers mercantile advantages to the European, infinitely superior to any the Cairo and Suez line possesses, is yet sufficiently under the control of the Egyptian Government to render any

political apprehensions groundless. This line lies between Alexandria and Cairo."

The route to be taken on starting from Alexandria is parallel to the Mahmoudieh Canal, along the embankment which separates Mareotis from Lake Madieh, as far as the point where the canal bends to the east; and then, avoiding the more cultivated districts, the line should skirt the desert, east of the Natron lakes, and finally terminate at the village of Ghizeh, opposite old Cairo.

His summary is to the effect, "*First*—That the present means of transit are deficient in the important points of convenience and regularity.

Secondly.—That these deficiencies would but be remedied by the formation of a railway in the direction mentioned.

Thirdly.—That there are no insurmountable physical obstacles to the construction of the line. And

Fourthly.—That it could be efficiently constructed at such a reasonable cost as would give sufficient guarantee of remuneration to the undertakers."

IMITATION *versus* DECEPTION.

OUR friend, the defender of imitations (as he calls them) thinks I might have dispensed with applying the "ridiculous term blasphemy" to the expression that "all nature was deception,"—(in other words, the Author of nature a deceiver.) If I now dispense with it, I only do so because he has not repeated this position; and by his not repeating it, I conclude that, whether ridiculous or no, the term has not been used in vain, and that he has had the good sense to see the monstrous nature of the expression into which, in his eagerness to find a support for a favourite opinion, he had inadvertently been led. Even less things have doubtless led us all occasionally into positions involving blasphemy.

The ridiculous use of the term appears to me its application to a style of ornament. It is not I who so applied it; nor should I think of applying it, as Mr. Ballantine suggests, to the practice of men calling one another creators, though I object to that perversion of language, as well as he. I call it ill taste,—falsehood,—presumption, if you will, but cannot consider the term blasphemy "fitter" or nearly so fit for this, as for the expression to which I have applied it, and to which, if repeated, I will still apply it.

A further reference to Dr. Johnson, however, was to enable me to see the term "*deception*" in such a light as to alter all this. Unfortunately my edition of the dictionary does not give either "*counterfeiting*" or "*imitating*" as synonyms of deception; and the use of these three terms as equivalents is a piece of information entirely new to me. Imitation and deception have always, to my mind, been totally distinct ideas,—things which *might* exist together, but were more frequently separate;—as, for instance, imitation without deception, in a pupil imitating a master, and in the whole circle of works of true art, which all imitate nature;—and, on the other hand, deception without imitation, in proceedings with which the London shopkeepers have more acquaintance than they desire,—which, though deceptive, are so far from copyism, that their originality shows a fertility of invention truly creditable to the genius of this country, and disproving (if nothing else will) Mr. Ballantine's singular opinion that "man is not an inventor."

Again, the term *counterfeiting* has always, to me, conveyed both ideas together,—has implied the union of both deception and imitation,—and, therefore, has not been equivalent to either, but only to one species of each, viz., to that species of *imitation* which does, may, or would, *deceive*, and to that species of *deception* which is effected by, or depends on, *imitation*.

Now, till Mr. Ballantine has shown us some authority, besides his own, for confounding these three terms together, I shall take the liberty of adhering to my accustomed use of them as all distinct; and shall consider that there may often be imitation without deception,—just as frequently deception without imitation,—that there may be either without counterfeiting,—and that there cannot be a counterfeit without both.

This terminology will enable me, I hope, to make clear to Mr. Ballantine, the very important point on which he has applied to me for information,—an information really of the utmost importance to an artist. He asks, "if the arts wherein imitation [counterfeiting] is practised, be set aside, where professors of the fine and decorative arts are to find materials whereon to exercise their faculties." If arts wherein *imitation* (as I use the term) is practised were set aside, there could be no professors of fine or decorative arts, for these arts are all essentially imitative. It is plain, therefore, that by imitation, our friend here means only that species of it which I distinguish by the term *counterfeiting*. My answer, then, is, "you will find your materials *precisely where you found them before*,"—in the works of *nature*, and in artistic *precedent*. Your materials will remain precisely the same, but the faculties you exercise on them will be slightly different,—you will still *imitate*, but *without counterfeiting*; you will imitate more closely,—more truly. Instead of natural *appearances*, you will imitate natural *realities*. Instead of the *peculiarities* of natural things, you will extract and imitate their *generalities*. Instead of that which distinguishes one thing from another, you will imitate that in which many or all things are alike. You are not imitating nature now, for how can that be *nature* in which no two things are alike? You are not copying *deviations* from nature, you are copying the works of *chance*, instead of those of *creation*,—for everything in nature contains both, and you just extract the wrong portion. Imitate, not what you see, but the method of what you see done. Imitate (both in nature and in preceding art) not the *appearance*, but the *work*, or rather (as Quatremere de Quincy says, in the introduction to his essay on Egyptian art) not the work but the workman,—not as a copyist imitates a pattern, but as a pupil does a master,—"*qui fait, non ce qu'il voit, mais comme il voit faire*." Imitate the ancients: *i. e.*, imitate not *what* they have done, but *as* they have done. Imitate natural and artificial precedents as they were imitated "when the Memnonium was in all its glory," and when the Parthenon was in all its glory, and when Westminster Abbey was in all its glory. Ah! counterfeitor, where are the counterfeits *here*? Is *this* monstrous artificial creation? Did the artists of this abbey "fancy themselves creators?"—and yet show me the counterfeits in it. There are none, for they have not even copied a single plant, leaf, or flower. Have *they* been in want of "materials on which to exercise their faculties?"

But, in this truer and more exact kind of imitation, you will also be always *inventing*, as well as always *imitating*. Therefore, if you persist in the maxim, that "man is neither a creator nor an inventor," I can help you no further. I still think with the majority, that man in general *is* an inventor. Most men think themselves so, and would consider a man who thinks the contrary, and professes a fine or decorative art, to have mistaken his calling.

Mr. Ballantine remarks that I have not said "that the concavity of heaven and the rainbow are what they appear to the eye." After saying that "there is no false appearance in nature," and much more to the same effect, I could not possibly guess that this statement was required; but to satisfy him, I now add, that these and all natural phenomena *are* what they appear to the eye. It may assist him to add, that I deny *things* to appear to the eye at all. Perspective forms and colour appear to the eye. *Things* appear to the mind only. I must only remind him that there is all the difference possible between things *appearing* correctly and *being seen* correctly; a difference which he seems to have overlooked.

And having now given him the information he desired, I must disclaim all the merit of his ingenious plan for converting works of false art into true, by turning them inside outward. His gold picture-frame stuccoed over is all his own, and not deducible from anything I said. I told him all works of true art were more than they at first appear. I *never* told him all things that are more than they at first appear are true art. That is entirely his own addition. I suppose it was in this way that, when he found in Johnson that every counterfeit was a deception, he concluded that every deception was a counterfeit. I suppose, too, when he found that counterfeiting was imitation, he concluded that imitation is always counterfeiting; and hence, again, that imitation and deception were the same. Some very curious discoveries may be made by this kind of reasoning.

I have little doubt Mr. Ballantine "always thought, that, even in works of high art, the more complete the deception, the greater their excellence." That he always thought right, does not follow. Many of your readers have doubtless always thought the same; and yet, on reading *any foreign* work on art, or the "Oxford Graduate" on painting, or the chapter on "Truth," in his far less admirable "Lamps of Architecture," may possibly be led to think quite differently; or at least not always the same.

That marbling, &c. were used in Egypt 3,000 years ago, requires proof, which I will thank Mr. Ballantine to produce. Whether they were or not, I have (to borrow his concluding expression) no hesitation in saying such arts flourish best in a country like Britain, where the paltry pretences arising from worship of wealth afford the surest guarantee for progress in all that ministers to man's intellectual and physical abasement and brutalization;—in a society that, to keep up hollow counterfeits of wealth, can starve its labourers, and suck the life-blood of God's poor;—in a country brought down to the most desperate extremities, even to that which is *really* mentioned in Holy Writ as the *comble de douleur*, not that which Blondel (as quoted by Mr. Cockerell the other night) so calls, but that which is denounced against the utmost sins, viz., for the land to "spue out" her inhabitants;*—a country that *has been* civilized, *has* had its days of progress and improvement, *has* been young and now is old,—very old and very ugly,—very pinched and wan, and very *thickly painted* too;—a country that, with all this, I love too well to join the sycophants that, finding her name a substitute for their own, puff her up with lying flatteries.

And now, if I do not, as Mr. Ballantine wishes, attach to this any other name than before, I beg to assure him I have no wish to take advantage of his promise, in that case, to leave me "the field." I know of no field. I am not attacking a person, but a thing. I am not writing for Mr. Ballantine, but for such of your readers as are undecided on a question to be settled by arguments, not names. We do not argue to convince *each other*, but lookers on; for it is notorious that arguments only strengthen each arguer in his own opinion. We do not appear as combatants in the lists, but as pleaders before a jury, consisting of you and your readers. The question is not who can wield his weapons best, but who is on the right side. I hope, therefore, my friend will not be deterred, by what he has said, from addressing you again; and if he has any more questions to put, I will again endeavour to answer them: if not, he is quite welcome to the last word; and when he has said it, I hope he will shake hands with "Calotect," and not break the fellowship proper between those pursuing one common object—the discovery of truth.

CALOTECT.

BLACKFRIARS BRIDGE.—At a recent meeting of the committee appointed to manage and control the Bridge House Estates connected with the corporation of the city, it was decided unanimously that the centre of the fifth arch of Blackfriars Bridge, nearest the Middlesex shore, should be securely propped without delay, and that every possible measure should be taken to make the piers secure, and to protect the public from any apprehended danger.

* The expression occurs in Leviticus xviii. 25 and 28; also xx. 22.

ARCHITECTURE BETTER THAN "NAVVY WORK."

TOWN HALL, HEMEL HEMPSTEAD.

Mister Bilder,—If so be I am not makin to bould, for I like to be at top on t tree—tho Bill Sykes t Bricklayr ses he thowt I ud be offenden ye, bud Ise heerd a diffrent tail, not that, so to cum at point. I sead in your paper on t 15th on this munth a advertisment cald competitons to architeks, Builders, and Others. This I thowt wor kindly ment, so as I nowd that mony girt Ingenears had worked in Coil pits or at pudlin furness, and sum like John Car o York in stein pits and quarrys, and that brindly wor nowt bud a navvy lik mesen, and I can chalk out scratches as weel as sum o yawr carpenter lads, it south as Ise seed, I tuk it upon me to indite a letter to they chaps at Hemel Hemstead, and when I wrote it Bill ses nay, thous dun it so weel that thou mun send t copy out; an its ony to shew thous gettin a bit o pluck in thee. So here it is, and happen ye'll approve on it.

Coppy.

Mister Roberts, Lord Mayor of Hemel Hamstead, Sir,

I seed a kindly advertisment to architect, bilders, and others in t' Bilder paper of Setterday last when I wor up in London to see t girt glas house, and as I am one ot tothers, I tak liberty of asking you for the further partiklers, as I got a notion that I can make plans for t new town hall as is to be stuk upon columns or piers if yel be so good as send me t sise on them piers, and say wether ye wad like town hall to be of stein or brik or wood or lats and compo, and I sal be sewer and send in time, becoss the chanse of making more nor fifteen shillin a week on t railways, costes nowt but a bit of labour for a chap out of work, as a friend that I teld on my skeme has gid me t paper and pencil. Direct for me by t name of Jonas Warton, at Matty Grogans, friday market, York. I thowt Ide just send summat ot sort to Mr. George Piggott, Esq., of Bolton, but Ile just bide a bit till Ise done this, and then for t church edicationals.

PATENT RIGHTS AND LAW FOR PATENTEES.

A case was set down for trial on Tuesday, the 11th inst., in the Common Pleas, and as it involves some matter that may prove important to inventors,—being, moreover, in the *building* line,—I send you the fullest report that has appeared.

Denley *v.* Blore.

This was an action by the plaintiff, a builder at Pimlico, and a patentee of an invention for the construction of tubular flues for chimneys, against the defendant, who is the well known architect, for an infringement of his patent. The defendant pleaded not guilty.

In 1842 the plaintiff took out a patent for the application of tubular pipes, composed of baked terra cotta, or potter's clay, to chimneys, by means of which, and the mode in which they were to be fixed in buildings, air was excluded from the chimney, heat and flame confined to it, and the whole mass of the building was considerably strengthened. When the defendant commenced the recent alterations at Buckingham-palace the plaintiff sent a specimen of his invention to the defendant, hoping that he would adopt it at the palace—or, as the learned counsel termed it,—"that splendid building, got up with more than Aladdin-like alacrity," at Pimlico! but upon making inquiries some time afterwards he found, to his surprise, that an exact imitation of his patent was being used there, without his permission, and without his deriving any profit from it. The plaintiff remonstrated, but without effect, and he therefore commenced the present action.

Before the case had proceeded far,

The Lord Chief Justice said—Have you not got the wrong defendant here? Should you not sue the contractor instead of the architect? If I employ an architect, and in his specification he says he will supply me with patent chimneys, does that make him liable if the contractor infringe a patent?

Mr. Serjeant Allen.—Not if he be merely an architect, and do not authorize, or approve of, or benefit by the infringement.

The Lord Chief Justice.—Well, what is the case here, Brother Byles?

Mr. Serjeant Byles.—My lord, the defendant in this case is the architect merely; and whether this patent have been infringed or not,—which is a question,—has had nothing whatever to do with it.

Mr. Serjeant Allen.—I was afraid it would turn out to be so, my lord. We will, therefore, withdraw for the present, and come again, if advised to do so, against the right party.

Plaintiff non-suited.

It appears that the patentee had his tubular flues (in terra cotta) manufactured at Burslem, and that he opened a wharf for the sale thereof in 1843, which sale he continued for two years, until finding that sale unremunerative, he closed that establishment. He had, however, sold some quantities to various builders, and amongst others to Messrs. Bird, of Hammersmith, who used them in the Consumption Hospital, and also some (chiefly as samples) to Mr. Harrison, who had them taken to Buckingham Palace, in the old portion of which building he used a small quantity.

In the year 1848, the patentee found that his flues had come into general use, and that the whole new additions to Buckingham Palace were fitted up with his plan of chimney-flue: when he applied to the architect of that building, as well as to those of other large edifices in London, for compensation in the shape of license fees, that demand was resisted, and he therefore instituted an action at law *first* against the royal architect.

A postponement of that trial was applied for on the ground that the defendant's principal witness was dangerously ill, and such application was allowed by the Court; therefore the case was deferred until Tuesday last, and when the plaintiff (a poor working bricklayer) came forward with about nineteen witnesses to support his rights, a new form of delay (or in this instance of defeat) was resorted to, which, if it were known to the defendant on the former postponement, would seem to have been an equally valid reply to the action then as now.

In fact, it was agreed that the defendant in this cause was the wrong man, and that the right man was the *builder*, and not the architect, of Buckingham Palace!

So it was ruled by the Court, and counsel for the plaintiff had no alternative but to withdraw the record, and the unfortunate patentee no other resort but to commence *de novo* against the builder, as he could not very loyally sue her Majesty, hose Royal sign manual was inscribed on his patent, for an infringement of that document.

Thus, having lost seven years (one-half) of his privilege, the breveted inventor has to enter a new suit, wait three months longer, collect, if he can, his score of witnesses, get up the funds, and keep up his spirits, on the hope of bringing his cause before a jury, under the possible contingency that he may acquire some reward for his ingenuity, and some return for 157*l.* the expense paid on taking out his Royal License!

The wasting anxieties of delay, with the necessity of litigating a patent right, are trying enough to the spirit of a man in competency, but the expenses of repeated law-suits on a poor man are hard to bear. And now, whilst sympathizing societies are struggling to enfranchise poor inventors from extra extortion, it would be well if they would take a hint from this case, and try to establish the validity in evidence of the *original patent*, the *original specification*, and the *original drawings* (as before exorbitantly paid for), in order that there should be *primary* evidence on trials in court.

In the case of *Denley* v. *Blore*, although these documents bore the attesting signatures of officials, they were not admissible as evidence; and although the plaintiff *had them in possession*, he was obliged to pay 3*l.* odd shillings for *new* and *other* copies in order to produce in Court!

If claims of this kind be surreptitious, they ought to be met in a *straightforward* way; but if they be valid, and fair letters patent be worth anything, then they ought to be admitted. Q.

The Exchange at Antwerp is about to be covered with a roof of iron and glass.

The Army and Navy Club, Pall-mall, has been opened for the use of the members.

DESIGN FOR ENLARGING SMITHFIELD MARKET.

The Markets' Improvement Committee of the Corporation of London have issued a very good isometrical view, ground plan, and elevation of the improvements in the neighbourhood of Smithfield, designed by Mr. Bunning, and proposed to be carried out by the Corporation. The proposition is to clear a large site to the west of the old market, with a frontage in Victoria-street (the new continuation of Farringdon-street), and to form thereon the dead-meat market next the street, and the cattle-markets behind. On the site of the old markets Mr. Bunning proposes to erect a large establishment of baths and washhouses, a handsome fountain for the use of the market (the lower basin supported by sculptured or metal bulls), and a pile of lodging-houses for the poor. These last would be in Long-lane, and, if we understand the plan correctly, would be somewhat hemmed in by other buildings.

The plan would have the effect of sweeping away a neighbourhood at present a great nuisance, and would give accommodation for 5,000 beasts and 36,000 sheep, instead of, as now, 2,750 of the first and 30,000 of the latter. Fine as the intention is, however, and great as the improvement upon the present arrangement would be, we should deplore the success of the scheme as tending to perpetuate, in the heart of the City, this mighty nuisance. A traffic of seven millions per annum necessarily involves the interests of a large number of persons, and the removal of it must be dealt with liberally and cautiously; but, apart from this, there is nothing to be advanced in support of the retention of the live-meat market there: the enormous cost of such a scheme in such a place, the insufficiency of the thoroughfares, the demoralising influence of a cattle market, and the long train of other evils which follow, all array themselves against the endeavour to retain and increase Smithfield-market.

WATER IN DERBY.—CONSTANT SUPPLY.

With reference to a recent note in our provincial news as to the charge for water to the poor by the Derby Waterworks Company, Mr. Hawksley, the engineer, writes us, that the humbler classes are supplied by this company (whose works have only been six weeks in operation) at rates of charge very much less than we were informed was the case. He says the company's scale of charges is as follows:—

When the annual rent amounts to		And does not amount to		s.	d.	
£2	....	£3	....	0	9	per qr.
3	....	4	....	1	0	—
4	....	5	....	1	3	—
5	....	6	....	1	6	—
6	....	7	....	1	9	—
7	....	8	....	2	0	—

with from 12½ to 20 per cent. discount on the above charges for payment from the landlord.

Mr. Hawksley continues,—"I believe I may claim for myself an experience in the construction and management of works on the system of "constant supply" as extensive as that possessed by any other engineer. Amongst numerous other advantageous results of the application of that system has been the discovery of the important fact that, with properly constructed works, a "constant supply" can be afforded with less cost and less wear and tear than an "intermittent supply."

The Woods and Forests.—In reply to a question by Lord Duncan in the Commons, Lord John Russell has intimated that it is the intention of the Government to bring in a Bill this session to make better provision for the management of the woods, forests, and land revenues of the Crown, and for the direction of public works and buildings.

Statue of Wallace.—This colossal work by Mr. Patrick Park is now completed, and has been removed for exhibition to a wooden building at Bellevue, Edinburgh. On Thursday week the uncovering of the statue took place in presence of a large party of Mr. Park's friends.

SAPPING AND MINING AT DERBY.

THE influence of the Central Board of Health on local boards, in inducing, or rather compelling them to employ the sappers and miners in making surveys and sewerage maps, &c. of the towns under their sanitary guardianship, has been rather too successfully exerted, it would appear, in various instances; but recent doings at Derby are at length likely, if we mistake not, to bring this influence to such an issue as will at least limit its undue exercise, whatever force the order of the Central Board to employ the Ordnance in *attesting* surveys already made may still continue to exert upon the local boards. The Derby Council constituting the Board of Health for that city, have appealed to counsel for advice on the subject, and it is the decided opinion of Mr. Peacock, who was consulted, that "the local board cannot legally enter into *any* engagement with the Board of Ordnance." It remains to be seen what the Central Board will say to this. The opinion of the eminent counsel consulted in this case is to be communicated to the board for *their* opinion or decision on the point. As remarked by the *Derby Mercury*, which is warmly espousing the cause of the general profession of civilian surveyors, and of the local members of that profession in particular in the present instance, "the Boards of Health in many towns have at once tamely submitted to the dictation of the General Board in London, for fear of "getting into difficulties;" but the most difficult part of the business now may be to get clear of their engagements with the Ordnance." There is but too good reason for the surveying interest throughout the country to be on the alert, however, and to take instant advantage of the present posture of affairs if they can; for it is feared that "as an engagement cannot legally be made with the Board of Ordnance, some individual may be put forward on its behalf as a scape-goat."

NOTES IN THE PROVINCES.

THE bells of Wilburton Church, in the Isle of Ely, have been recast and rehung on a new principle, with new frame-work, &c., at the expense of Lady Pell. Mr. G. Benstead was the contractor, and Messrs. Taylor and Son, of Loughborough, the bell-founders.——A new engine and engine-house have lately been erected at Flood's Ferry, Doddington, for the drainage of the Ransonmoor district in that parish. The building, with a shaft 70 feet in height, was erected by Mr. Richard Freeman, of Ely, builder; and the surveyor employed by the Commissioners was Mr. George Allen, of St. Ives, architect. The engine is a forty-horse-power expansive condensing engine, with a scoop-wheel 34 feet in diameter, and 24 inches blade, with two boilers, and many of the modern improvements lately introduced into drainage engines. The engine was designed, erected, and fixed by Messrs. Beecroft, Butler, and Co., of Kirkstall Forge, near Leeds, engineers.——A dispute between the Directors of the Albert Pier Company, Portsea, and Mr. Rolt, has been brought to a conclusion. For work not in the contract, it appears Mr. Rolt claimed 4,000*l.* After repeated attempts at arrangement it was referred to arbitration, and after a very lengthened investigation, it has been decided that Mr. Rolt shall receive 1,000*l.*, each party to pay their own expenses, which will be very considerable.——The erection of a chapel at Winchester, for the accommodation of the troops in the garrison there, it is expected, will be commenced early in the spring. The extreme length will be 132 feet. It is also intended to erect a house for the military schoolmaster.——The Sherborne vestry have resolved to apply to the Commissioners of Public Works for a loan of 2,000*l.* of the sum (4,000*l.*) necessary for the repair of the central tower and its piers and arches, and of the north transept of the church. A protest has also been made against the resolution.——The Plymouth baths and wash-houses, which have been in operation twelve months, have succeeded beyond the most sanguine expectations of the promoters.——The governors of the Free Grammar School, Birmingham, have presented a site for the erection of a new church in the vicinity of Ladywood.——The North and South Wales Bank, according to the *Liverpool Albion*, have determined to build four villas in Birkenhead-park, as an experiment, with a view, we presume, to the erection of more if successful. It is understood that Mr. Arthur Holme is to be the architect, and Messrs. J. and W. Walker, of Birkenhead, the builders.——The Unitarians, it is said, are about to erect a chapel in the vicinity of Grange-lane, Birkenhead.——The foot-walk from the north gate of George's Dock, at Liverpool, to the Landing-stage-bridge, is now nearly completed. It is formed of Scotch granite sets, according to the local *Times*, the sets being laid upon a bed of macadam, upon which grout is plentifully poured. The interstices of the sets are then filled up with grout, and after some time has been allowed for the mass to harden, the whole surface is carefully examined, in order that cavities which the grout has imperfectly reached may be filled up.——A dividend of 10 per cent. has been recently declared by the gas company at Blackburn, Lancashire, and the accounts show that, in January last, there was a balance in the bankers' hands of 1,037*l.* 16s. 11d., and that during 1850, 4,100*l.* 14s. 2d. had been expended in putting down a telescope gas holder, cast-iron tank, new tar-pits, coals, &c.——The old shambles in the market-place at Middleton, Rochdale, have been pulled down. It is conjectured that Messrs. Peto and Betts, the owners of the estate, are intending to erect a new market. Preparations are being made for more buildings than have been erected for many years past, both in Tonge and Middleton.——The new Catholic School at Lancaster is now completed. It is in the Early English style.——The largest cotton-mill in Lancashire ever built at one time, it is said, has recently been erected by Mr. John Mayal, of Bottoms, Mossley. It is 137 yards long by 26½ wide, inside measure. It will give employment to many hundred hands. The mill is 43 windows in length, and six storys high. The engine is upwards of 100-horse power.——The estimated cost of repairing the Barrow monument, at Ulverstone, is 140*l.*, of which more than one-half is still to be subscribed for.

WATER SUPPLY.

ENORMOUS sums of money have been disbursed by the great community of Great Britain in the construction of public works: those of the metropolis have been large—the bridges almost incalculable—the Houses of Parliament, museums, columns, and other non-utilitarian monuments beyond conjecture; and throughout the country, within twenty years, the expenditure on the media of commercial intercommunication—railroads—has exhausted millions! Many of these great works were, in our age of improvement, indispensable; none of them without their utility in the expansion of wealth and science; but it is hardly reconcileable to the understanding that whilst the ornamentation of the capital, or the utilizing of increased ways, demanded and obtained so large an outlay, yet that the greatest want, the most vital necessity of a populous city (the most populous and richest in the world) should have been all this time unimproved, if not wholly neglected.

The water supply for two breathing millions is yet, as to quality, no better than it was 100 years ago: nay, it is rather worse, for any additional sources have been deduced from the Thames within the reach of sewage discharges, and that supply is now less pure than formerly, when the taint of impurity resulted from a civic and rural population of not more than one-fourth of that now existing, which defiles the stream whilst it calls for more.

For the consummation of any magnificent structure funds are never wanting: a colossal design, the triumph of engineering, is planned to connect Anglesea with the main land—the object is but to save half an hour in the transit of mails or passengers, but to connect the magic rails of flying transit,—and straightway from 200,000*l.* to 300,000*l.* sterling are subscribed to effectuate the stately conception. And yet with such facts before us it is quite incomprehensible wherefore, in cases of crying necessity,—cases wherein the health, comfort, and prosperity of two millions of souls packed densely within a circuit of a nine-mile traverse are at stake,—a less sum than was required for the completion of the Houses of Parliament should not have been funded for the perfection of this great city in the essential particulars of *water supply* and *sewage*.

Two years have elapsed since the cry of suffering humanity proclaimed to the Legislature that the pipe water-mains not only conveyed an inadequate quantity, but that the quality of the element was of a *vitiated nature*; that instead of healing, it bore disease into the heart of society, and was in itself *pestiferous*. Two years since, the ravages of disease carried off by thousands the dwellers in the vicinity of undrained swamps; for the mortality of cholera was not only traceable through the filaments of foul water-pipes, but was also demarcated by the stagnant ditches, the feculent water-courses, and the lay-stalls where putrescence was suffered to accumulate in poor, disregarded neighbourhoods.

Prayers for deliverance were then offered up at the altars of religion, but the energies of man have not as yet been applied to the redress of these evils; and we are little less exposed than ever to another visitation from the same uncorrected causes.

In New York, a population of 200,000 has disbursed as many pounds sterling to convey into that city a limpid and all-sufficient flood of living water. Liverpool, Manchester, and Plymouth, and others of our towns, have taken the start of London, and conveyed incessant rills to the house-tops of their limits: still London continues inert, and the echo of voices so lately clamouring for *water! water!* is not responded to.

Plans have been suggested (and many that are most feasible),—commissions have been formed, and corporate councils held; still we are as in the beginning, debating, complaining, and planning. Yet no measures have been carried into effect, nor (as far as the public is informed) has any particular system been adopted for either of these purposes.

Is not one warning enough, or do we await another plague?

One of THE BUILDER'S correspondents propounded some months back a bold and grand project, which contemplated to supply not only London, but several towns on the line, with a copious flow of *pure soft water*. His gathering grounds were those constructed by nature—the Welch mountains, and his fountain, the exhaustless Lake of Bala.

By natural gravitation, and, therefore, without the aid of machinery, all London might receive a bounteous tribute to its highest culminating points,—the ball of St. Paul's, or the, as yet, undefined pinnacles of the Victoria Tower,—every habitation, however majestic or humble, might draw incessant fountains of that element which nature distributed freely for the use of all.

The gathering grounds of these waters are the lofty reaches of slate formations in the Welch mountains,—high in the winter's snows and summer's rain: rills blanched and weather-beaten pour a never-failing torrent into the lake.

It may appear difficult or costly to conduct a stream some 140 miles; yet if aqueducts can be formed twenty miles or more, why not ten times twenty? Cylindrical ducts in iron, cased, if necessary, in gutta percha (so as to be secured from rust or waste), might be laid six or more feet underground, traversing the country direct, or by the most convenient ranges: these need not interfere with any superficial interests: laid under a ploughland, the team would pass harmless over,—the same through a pasture-field or through a hamlet—the line being demarcated, as are parochial bounds, by stones or posts. For this mode of practication the cost would be but trifling: in fact, the valuation of damage would amount to no more than the temporary suspension of agriculture whilst the pipe-laying was in progress. Two four-feet pipes would convey at high-pressure more than all Middlesex covered with houses and population might

require; and, if that were not enough, a third pipe might minister to intermediate towns (such as Cheltenham, now badly watered), and also to fountains,—a luxury and ornament to which the British people are little accustomed.

Quondam.

FOREIGN INTELLIGENCE.

Extensive Town Improvements, Paris. — The municipal council has, in its last sittings, exhibited great energy in carrying out vast improvements, as it is also fully acknowledged on the banks of the Seine, that structural improvements cause improvements of the people. The prefect having proposed to grant the public lavatoires a reduction in the price of water, the council have assented to it at once. Next, the enlargement of the Rue Montmartre was entered upon, which will be effected, beginning from the Rue Tiquetonne up to the passage du Saumon. On this occasion, the statistics of the late improvements have been laid before the municipality, from which we gather the following. During the years 1849 and 1850 the number of houses demolished in the different districts of Paris for the sake of improvement amounts to 323, of which the approaches to the Hotel de Ville comprise 88; those to the Louvre 98. The average price paid by the city to the owner was 415 francs for one metre: the total outlay amounted to 28,999,000 francs. The houses thus pulled down had formed about 4,845 abodes or lodgings, occupied, at an average, by three persons each. This amounts, therefore, to an expulsion of 15,000 people from their dwellings. The French press justly alludes to the necessity of providing the people, thus removed from their abodes, with others of an improved character. It justly reproves the present custom of replacing houses of an *inferior* character by mansions and luxurious shops, and appropriately hints at an improved system of co-operative buildings for the industrious classes.

Munich New Society for the Improvement of Trades and Industry. — The chief purpose of this new establishment in the Bavarian capital is—to impart (*zuwenden*) the innate force of art and its improvements to those branches of trade and industry which stand in connection with the putting forth of tasteful and beauteous forms; to make them follow those *principles* independent of any transitory or foreign fashion; and to achieve, as well, solidity and moderate prices. To dilate on the utility of a connection between art and trades would be needless; but the Munich society has effectively organised, in Germany, this long-felt desideratum, by furnishing manufacturers with suitable designs for any given purpose, by exhibiting articles appertaining to its competency, by purchasing such for the distribution of prizes, and by publishing an illustrated periodical. A new feature also has been given to this society by its decidedly *national* and German character, because, as long as the art-forms of any people be entirely determined and ruled by any foreign patterns, be they even those of Rome, Athens, or Pompeii, they will still lack of an independent, creative power. That these ideas begin to be rather prevalent in Munich, may be gathered from the festival on the installation of the Bavaria, where all ornamentation belonged to the old German art-sphere, as was also the case in the album and bureau of the tradesmen, presented to King Ludwig.

COFFEE-SHOPS OF LONDON.

You will perhaps allow me to express my concurrence with the remarks of "A District Surveyor" (p. 64), respecting the coffee-shops of London. Those who know anything of foreigners on the Continent will perceive the necessity of providing them with viands suitable to their tastes. The beef, pork, and mutton dishes which are so dear to Englishmen, will not only be *dear*, but indigestible to nine-tenths of our visiters this year. The general construction and management of the greater number of our coffee-shops are also very faulty, compared with the *cafés* of France and Germany. Whatever opinions we may have respecting the personal habits of foreigners, their *cafés* are generally noted for cleanliness and comfort, while their coffee and other beverages are no less famed.

With a few exceptions here and there, the coffee-shop keepers of London pay little or no attention to cleanliness, neatness, or snugness. Some coffee-houses, indeed, are so objectional in these points as to prevent decently-attired persons from frequenting them. The place is often dirty, and the attendants slovenly. These remarks apply with still greater force to cooks' shops. A very bad custom, prevalent in all coffee-shops, cooks' shops, &c., is that of allowing persons to exchange papers with one another, instead of the exchanges being made through the attendants. It leads to much confusion and rude obtrusion, by persons going about the room in quest of papers. Hence the privacy and comfort so desirable at meals are destroyed. There is, on the whole, much room for improvement in the construction of the compartments, or "boxes," as well as the general management of coffee-shops and cooks' shops; and I think the discussion of this subject comes very fairly within your province.

P. F. K.

NOISOME REEK OF THE THAMES.

Not many years back the river that bore the commerce of the globe to London, adorned, expurgated, and supplied the inhabitants: only little way above Vauxhall-bridge the mercantile marine was used to take in water, and from the same source was derived the aliment for household use. It is scarce twenty summers since a row from Westminster to London-bridge in a wherry was an agreeable passage, for the tidal returns carried off with them the sewage from a mass of habitations, which, since that period, have been doubled in number and population.

Since then, although the natural flow of the river remains the same, and the recurring swell of tide continues as equably, yet the quality of the original supply has been greatly deteriorated up to its highest tributaries, and the pollutions from both town and city taint Father Thames in a complicated volume of filth. Were it not for the action of paddle-wheels, which causes a fluctuation that washes off the slimy shoals along the margin, the nuisance of fetor would be much worse than it is at present; for now, along the whole extent from Vauxhall to the Pool, these black deposits cease to accumulate, and the bed at low water discovers a pebbled shore.

The exuviæ of the city are thus more effectively carried down, but in the process, being held in solution and active commixture, by so much the more is the atmosphere tainted and the traffic incommoded.

If the increase of houses and population in the metropolis have aggravated the evils of a foul river, so the same cause operating in the rural districts (along the whole course to Richmond, and thence by Staines to Reading, Oxford, and other towns, as well as on the Colmefade, and numerous rivulets) must render the volume of the Thames, as a *source of pipe-water supply*, highly improper, if not detrimental, as it is impure. In fact, the only objects to which Thames water can now be applied, are those of *navigation*, *amalgamation*, and voidance of the sewage, mortar, or grout-making, and (from the crassitude and economy of the ingredient) *porter brewing!*

So vitiated has the stream become of late years, that until the amateur of Barcarole exercises has ascended above Chelsea, the reek and stercor of the river are at certain periods of tide intolerable, and always noisome. But below Waterloo-bridge it is black as Acheron. Steam-boats plying between bridges, when the atmosphere is still, give ample evidence of the fact, and very frequently, even when the wind is fresh up the river, it is commingled with a stench that it is painful to the sense as it must be inimical to health. The proposed amendment of sewers and diversion of sullage from the river by tunnels, which should carry the material to azote factories, may remedy the evil; and in the present age of improvement and enterprise, such a regulation would be as easy in the performance as the expense of construction is within the scope of the city's means. Yet supposing this great system of civic sewage carried out, still unless all the towns on the "rivage" should be treated after a similar manner (so that the corporate rights of London in the *due conservancy* of the Thames should be rigidly enforced), no use could be properly made of the natural river supply for nutrition, or even for culinary purposes.

Science and art, which are daily adding to the comforts of mankind, may yet offer some new remedy for the growing vitiation of this element of life. The columns of The Builder announce a new filtering apparatus, which, applied to every cistern, will, as pledged, yield a constant supply of faultless limpid water: how this may answer I am not informed; should it, however, be efficacious, then one desideratum will be gained; but until the sewage be wholly carried off from the river and disinfected, all the regions of the vicinage must remain unhealthy, and the free traffic of waterway continue to be, as it now is, disgusting.

As the growth of population is the cause, so every increase to the sojourner must add to the loathful reek of the river; and the accession of one million during every month of the coming summer increase the breathing horrors. The memory of every one who had a penny or twopenny transit last summer from Hungerford to the Shades must shudder in the recollections of appalling miasmata; and even those whose nasal perceptions are obtuse, if they have any dread of contagion and the spread of cholera, cannot but feel an interest in the great sanitary question — *the expurgation of the river*.

Foreigners (particularly the Parisians, who have no river locomotives) are very prone to the use of those facilities which cheap steamers afford in the long reaches: they will admire the noble aspect of St. Paul's, Somerset House, the spires, and, at high-tide, the majestic flood itself; but in the contemplation what spasms will not offended sensitiveness interpose to disenchant the wondering tourist? for not all the artifice of millefleurs, odours, or essences can overpower the baneful fluid.

Of the plans sent to the Board of Health, some are admitted good and feasible. The Corporation itself considers the necessity for improvement crying, while it purposes to expend more money in *only modifying* the abominations of Smithfield; but authorities are somnolent bodies, until they are impelled by some dire calamity. Your correspondent once spoke of the matter to a civil official, who shortly reproved him in these words,—"What business is it of yours? *You* can never let nothing alone."—

A snug *employé* cares not one d—n
For all the proffered hints of

Quondam.

THE BURY PEEL MEMORIAL.

The sum of 2,700*l.* having been subscribed in the native town of the late Sir Robert Peel, a limited competition was allowed, in which the following artists were requested to send models of a monument suitable to a site and position pointed out,—namely, Baily, Behnes, Bonner, Cheetwood, Duckitt, Durham, J. Foley, E. A. Foley, Hogan, Jones, Lough, Macdouell, Milnes, Marshall (the artist successful in the Manchester competition), Marochetti, Manning, Noble, Thomas, Weekes, Theed, and Truefitt, in all twenty-one. All the models, nearly forty in number, have been arranged for exhibition in the new Town-hall, recently erected by the Earl of Derby. The principal figures will be in bronze, and the pedestal in granite. The successful artist will receive 2,500*l.* for the monument. Out of thirty-eight statuettes, busts, and architectural designs, there are five by Baily, two by Macdouell, two by Noble, three by Jones, two by Durham, two by Duckitt, two by J. Foley, two by E. A. Foley, three by Manning, two by Marochetti, two by Milnes, three by Behnes, and one each by the rest, classified thus:—thirty-two statuettes, three busts, four architectural designs. Messrs. Bonner, Cheetwood, Jones, and Truefitt, are the authors of the four architectural designs. We are able to announce

that the committee have selected Mr. E. H. Baily, R.A., to execute the memorial. The statue, which will be in bronze, stands on a rich pedestal, decorated with the emblems of literature, science, art, manufacture, and the various branches of industry, in which he ever took a warm and zealous interest.

Miscellanea.

MANCHESTER SCHOOL OF DESIGN.—A selection of drawings produced in this school during the last year has been recently exhibited before being forwarded to the central school according to the regulations of the Board of Trade. The exhibition comprised some 400 drawings, selected from the work of the 360 pupils. It included specimens from the three departments into which the masters have found it necessary to divide operations; Mr. Hammersley attending especially to the instruction of designers for textile fabrics and the advanced pupils generally, besides giving a general superintendence to the whole; Mr. M'Callum undertaking the strictly elementary department, and Mr. Holding the architectural studies, or art in projection, including modelling. Of the 360 pupils, there are about sixty studying the production of designs for the staple trade. The female class lists comprise the names of seventy pupils.

WHITE'S HYDRO-CARBON GAS: EXPLOSION.—A fatal explosion in a gas and oil manufactory at Salford, belonging to Mr. Stephen White, the patentee of the "Hydro-carbon Gas," appears to have revealed the fact that this patentee derives "a still more purified gas" from the residuum, it is alleged, of the manufacture of his ordinary "hydro-carbon gas," besides "turpentine of a fine quality and a description of oil." In the explosion of three retorts referred to, Mr. Hodgetts, a practical chemist employed as manager, was killed, and more mischief, it is said, would have been done had not the flames been speedily extinguished by buckets of sand, as a large tank with a store of 400 gallons of naphtha stood not many yards distance from the flames.

RAILWAY JOTTINGS.—The Great Northern Railway undertaking in the neighbourhood of Newark advances satisfactorily: the line is nearly on a dead level about Newark, and the works being very light, are nearly completed. Rails are being laid down in aid of the river operations, upon which about 200 men are employed. Messrs. Rennie and Logan, of Newport, Monmouthshire, have engaged in the Trent works, at a very moderate contract.——Two gentlemen in New York are exhibiting an invention for stopping trains by electricity—or electro-magnetism rather, we presume—thus entirely dispensing with breaksmen.——The Venetian railway bridge is under repair. The part between Mestre and St. Juliano has cost 150,000 florins. It was found necessary to rebuild thirty-four arches from the very foundation; ten were rebuilt from the surface of the water, seven somewhat repaired, and forty-four, which had been prepared for blasting (powder was found in some of them), have been walled up. The expenses will altogether amount to 235,000 florins.

THE NEW SLAUGHTER-HOUSES, EDINBURGH.—The plans of the new "City Abattoirs" have been completed by Mr. Cousin. The main portion of the building has been arranged in straight lines, and is laid off in double rows—each row containing seventeen killing-booths, with a central passage 25 feet in width. There is a cattle-shed at the back of each booth, with separate entrances behind. The extent of each booth is 18 by 24 feet; and the cattle-sheds 18 by 27 feet. The sheds are each calculated to hold nine cattle and sixty sheep. The rows of booths are not continuous, but are divided into three separate blocks of building, with roadways between. The booths and cattle-sheds are to be all covered and slated. The drainage is managed by two sets of glazed pipes, one set to convey all the liquid manure to a large tank, and the other being appropriated to conveying the roof and surface water. A place has also been set apart for the reception of the blood—an article now used in manufactures. There is also an erection for the cleaning of tripe, and that part of the building which is opposite the rear of Gilmore-place is to be devoted to a hide and skin market. A manure depôt is to be placed alongside of the Lochrin burn, into which the whole of the offal and other refuse of the killing-booths will be conveyed in covered machines, so as to prevent any falling on the roadway leading thereto. The principal access to the slaughter-houses will be by Fountain-bridge. The extent of frontage there will be about 150 feet; and it consists of a lofty screen wall, with a porter's lodge and two gateways in the centre. The design of the façade will be massive, but without much architectural display. The inspector of markets will have an apartment above the porter's lodge, from which a view will be obtained of everything that goes in or comes out of the slaughter-house. The building is to be commenced in the course of a few weeks.

GUTTA PERCHA WATER-PIPE.—A gutta percha pipe of two and a half inches calibre, and 1,000 feet in length, has been laid down for conveying the Croton water to Blackwell's Island, New York. The line extends from the foot of Seventyninth-street to the island, the depth of the water varying from 30 to 7 feet. The engineer first arranged his pipe in one length upon the island, and formed a line of thirty boats, well manned, across the river. He then gave his order at the commencement of slack water, and the end of the pipe was drawn across the river by men upon the opposite shore, and was taken up by the men in the boats, and 110 anchors, each weighing thirty-two pounds, were attached to the pipe, being 10 feet apart. By word of command the men in the boats lowered at each point, to suit the inequalities in the bed of the river, as ascertained by previous survey. This was all accomplished in seven and one-half minutes, without accident.—*New York Paper.*

THE AREA IN FRONT OF ST. PAUL'S CATHEDRAL.—On Monday last the gates of the area in front of St. Paul's were opened to the public, and will continue to be so during the day. This may be regarded as the first step towards the accomplishment of the improvement suggested by THE BUILDER, and which first led Mr. Barber to commence the agitation for the removal of the railings. An immense improvement would be effected by taking down No. 1, St. Paul's Churchyard (the house at the south-eastern corner of Ludgate-hill. On looking towards Ludgate-hill from beneath the noble west portico of the cathedral, the extent to which this stands in the way is strikingly evident.

IMPROVEMENT SOCIETY FOR LEEDS.—It is proposed to establish a society for the improvement of the town of Leeds. A preliminary meeting has been held and a committee appointed to draw up a prospectus and rules. It is proposed, we believe, that the society shall not be executive, but suggestive, and act by influencing public opinion and taste on all matters connected with the ornament, healthiness, arrangement, and requirements of the town. It will therefore include, not only questions of embellishment, but also sanitary measures, sewers, streets, baths, public halls, libraries, museums, parks, gardens. "Why should we not have our shops looking into glazed arcades," says one who writes to us on the subject, "where no carriages could come to raise a dust? Why should we not look from our town-houses into squares roofed over so as to afford gardens in the depth of winter? The proposers, doubtless, know of the "Metropolitan Improvement Society," which existed several years and effected much good. In our provincial towns such societies, if well organised and worked, might prove of the greatest service. We congratulate Leeds on the movement, and hope it will be persevered in.

COVERING THE ROYAL EXCHANGE, LONDON.—We understand that a design for a glass covering to the Royal Exchange has been submitted by Mr. Paxton to the Gresham Committee. It resembles in some degree the roof of the transept at the Exhibition.

HALTING PLACES IN SOUTHWARK.—My attention having been directed to the suggestion of your correspondent that the "paving boards of the different parishes can be at no loss to find suitable places for the erection of 'halting-places,'" I take this opportunity of stating that the Paving Commissioners under whom I have the honour of being surveyor, have for some years past taken advantage of every opportunity to erect such, and within the last three years have constructed eight, providing accommodation for twenty-one persons. They are principally formed of stone, with one, two, or three divisions: polished slate, however, has been used in two instances, in one erected about two years since, with accommodation for eight persons, and in another constructed last year for three persons; proper means of drainage and cleansing being adapted in all cases by channels, trapped gratings, and drains. The last erected, which cost about 16*l.*, had an addition of a sloping roof of polished slate. They have been placed at the points most convenient and accessible to the public frequenting the crowded thoroughfares of this neighbourhood, by whom, I doubt not, they are greatly appreciated.—A. S. NEWMAN (for my father, Surveyor of Pavements for the East Division of Southwark.)

ST. MARGARET'S CHURCHYARD.—There is a slight movement in this direction: the magnates have been acted on a trifle, and trifles light as air are forerunners of good. There is near the vestry a small shrubbery planted; and if they would but relay all the paving—tomb-stones, if you will—with *mortar*, and make a *close paved* space of the whole yard, the surface water would run off, without being strained through our ancestors: this is a small request to make of them, and the mason employed would readily tell them the best way to do it.—NOT AN IDLER IN LONDON.

"THE VILLA OF LUCULLUS."—A correspondent says, with reference to this beautiful print, recently issued by the Art-Union of London,—"There is a circumstance connected with it, which I have never seen noticed, and which, perhaps, may add to the interest of the print, viz., this villa is the place to which Annibale Caracci retired for change of air when driven from Rome by his last illness. You will find a description of it at pp. 150 and 151 of a small book published by Chapman, in the Strand, called "Sketches of the Old Painters."

IRON TRADE CONTRACTS.—In the Court of Queen's Bench, on 15th inst., in the case of Staunton *v.* Wood, in which the price of a quantity of iron was sought to be paid for before the delivery of the goods, Mr. Justice Patteson ruled that, according to the contract, which was to be construed according to the intention of the parties, the delivery of the goods was a condition precedent. The use of the word "forthwith," in connection with "fourteen days," showed that the goods were to be delivered at some time within fourteen days. The declaration alleged a general performance of the contract, which was good on general demurrer. It contained a material traversable allegation, which the plea traversed: in that respect, therefore, the plea was good. The judgment of the court would be for the defendant.

LODGINGS AND HOUSES DURING THE EXHIBITION.—Since our intimation that Mr. Lahee was interesting himself in this matter, we have had various communications from agents; but we do not mention such matters except upon personal knowledge. Messrs. Eversfield and Horne, of Parliament-street, state that they would be glad to hear of any buildings, such as large warehouses or old-fashioned mansions, adaptable as dormitories for the working-classes.

FALMOUTH UNION WORKHOUSE COMPETITION.—Of seventeen designs submitted for this competition four were selected for further consideration. From these four, that by Mr. Frederick William Porter, of London, was ultimately chosen by the decision of the board. The other three selected competitors were Messrs. Eales, Niblett, and Powell.

TALKED-OF ROMAN CATHOLIC CATHEDRAL IN WESTMINSTER.—The statement which has been running through the papers that ground had been obtained by the Roman Catholic body, in the line of the new street now in course of formation between the Houses of Parliament and Pimlico, for the purpose of erecting a magnificent cathedral, to be called St. Patrick's, is erroneous. The commissioners have declined to grant land for the purpose.

THE APPROACHES TO THE GREAT EXHIBITION.—A correspondent (D. Cooper) says, "as the building stands between two carriageways, I would suggest that barriers be erected at the ends of each of these roads, and let all walk that short distance. I would not allow a carriage of any description to approach the building under any pretence whatever. If something of this kind be not attended to, I fear we shall hear of very many serious accidents."

THE MUSIC HALL, BRADFORD.—As many as 200 architects have applied for the preliminary instructions, with a view to send in estimates. In consequence of the unexpected number of these applications, the day fixed for receiving estimates has been postponed from the 1st of March to the 15th. We are also happy to state that it is resolved upon to devote 10,000*l.* to the erection and furnishing of the edifice, instead of 8,000*l.*, as originally proposed. The additional 2,000*l.* we think a most judicious increase.—*Bradford Observer.*

THE NEW BUILDING, HUNGERFORD MARKET.—In a note to your excellent leading article of Saturday last, you state that a building is to be put up in the *area* of Hungerford Market for the purposes of exhibitions. As architect to the alterations, I beg to inform you that the present open area will not be interfered with, the works being confined to the central avenue of the great hall, and to the space where the old fish-market was. As your observation is likely to create a prejudice against the undertaking, as conspiring against the "lungs of the metropolis," I should be obliged if you would put in a word or two to remove from us the stigma of trying to take away air, when, from the crowds of foreigners and our own country visiters, we shall require a double supply at least.—F. R. CANTWELL, Jun.

ADMISSION TICKETS TO THE INTERNATIONAL EXHIBITION.—Some surprise and dissatisfaction have been excited by the intimation that the Local Commissioners will be called upon to pay on every occasion for access to the Exhibition. Considering the immense expenditure of time and trouble by many of the Local Commissioners in securing the success of the Exhibition, we do think that the very least acknowledgment of their services that could, in common gratitude, be made, would be free tickets of access on all occasions. Besides remonstrances to this effect, we have had suggestions from correspondents that it would be a graceful act of politeness to present a season ticket to each of the 248 designers of plans for the Building.

A TRIBUTE FROM THE CZAR TO AN ENGLISH ENGINEER.—The Emperor of Russia has transmitted a silver medal, with the riband of St. Anne attached, to Mr. Joseph Thompson, engineer, son of Mr. Robt. Thompson, of Newcastle-upon-Tyne, butcher. Mr. Thompson served his apprenticeship with Messrs. Robert Stephenson and Co., after which he superintended the construction of the bridge across the Neva, which in Russia is designated "the Blagovenshensxoy Bridge in St. Petersburgh."

COLOSSEUM.—Active preparations are now making at this establishment for exhibiting Horner's Original Panoramas of "London by Day" and "Paris by Night," which must prove attractive to the great influx of strangers expected this year.

THE MONUMENT TO LORD JEFFREY.—We understand that the committee for erecting a monument to the memory of the late Lord Jeffrey, have commissioned Mr. John Steel, R.S.A., to execute a full length marble statue of the late judge, to be placed in the great hall of the Parliament-house.

SCHOOL OF DESIGN FOR WORCESTER.—A public meeting was held at Worcester on Monday in week before last to consider a recommendation by Lord Ward to the directors of the Chamber of Commerce, that a school of design should be established in that city. The meeting was numerously and respectably attended, the mayor in the chair; and resolutions to support the proposed institution were unanimously passed. In order to increase the probability of a Government grant, an annuity of 25*l.*, and a donation of 100*l.* towards the erection of a building, were announced on the part of Lord Ward.

ELEMENTARY DRAWING AND MODELLING SCHOOLS.—The Council of the Society of Arts propose that the aid and influence of the Society should be engaged to promote the establishment of such schools, chiefly for artisans. On the compliance of certain conditions relative to management, the Society is advised to prepare a code of rules, recommend trained instructors, provide and lend drawings, models, &c. till the school be self-supporting, and to distribute medals and rewards amongst the students.

THE TRIGONOMETRICAL SURVEY.—The Royal Society of Scotland, at the head of which is the Duke of Argyle, are strongly urging the municipal bodies in the country to petition Parliament for the speedy completion of the trigonometrical survey. They say, that although the survey has been going on for thirty-one years, its progress has been so slow that the mere skeleton of the work is not yet completed. The Irish survey was commenced in 1825, and practically brought to a close in 1843, at an average outlay of 40,000*l.* a year, while the average expenditure of the survey for Scotland has only amounted to 1,200*l.* a year. If carried on at the same rate, it would require 160 years for completion.

ELECTRO-TELEGRAPHIC.—The Judicial Committee of the Privy Council have refused an application made by the Electric Telegraph Company for an extension of the patent granted to Messrs. Cooke and Wheatstone on 12th June, 1837.

CHRISTCHURCH, SOUTHWARK.—The standing orders have been complied with in the case of a Bill to empower Marshall's trustees to alter, improve, or rebuild the parish church of Christchurch, the church to be completed within four years, with power to erect additional churches, chapels, and schools, and to borrow on mortgage 20,000*l.*

TENDERS.

Tenders for finishing seventeen fourth-rate Carcases, Grove-road, Holloway. Mr. Tatlock, architect.

Lovell and Co.	£2,071
Salter	1,710
Tear	1,671
Hocken	1,630
Hill and Son	1,600
Fletcher and Lloyd	1,555
Sheffield	1,410
Mitchell	1,319

Tenders for the erection of Shops and Stores, in Victoria-street, Belfast. Mr. Jno. Boyd, architect.

Cooper and Aiken	£1,685
Watson	1,550
W. Crawford	1,420
Lowry (accepted)	1,400

TO CORRESPONDENTS.

"An Artist," "A Worn-out File" (shall appear), "Ex Member," "Constant Reader" (apply to the honorary secretary, Chester), "A Subscriber" (the competitors were aware of the requirement when they sent in. Our own objection to the course we have already expressed), "J. B." Queen-street, "H. D.," "B." Belfast, "An Amateur," "A Subscriber," "H. F.," "F. G.," "Quondam," "J. T. S.," "J. J. C.," "F. R. W.," "J. E.," "Not a Contributor," "E. B. L." (shall not be overlooked), "J. E." (will appear), "W. B. S.," "J. W." (ditto), "W. P." "W. C. C.," "J. J.," "E. T.," "T. C. T.," "J. B." Blackheath (cannot recommend), "J. P. S.," "G. G." (thanks), "X. L." (timber frame-work would not be permitted), "J. M." (shall hear from us), "H. T. B." (ditto), "A. B." (we do not understand the question), "H. A." (send us the particulars), "*Muratores*," "H. M." (we are sorry we did not see him), "G. S. S.," "H. C.," "T. H.," "Iota," (we are forced to decline).—"The Geometric Beauty of the Human Figure Defined," by D. R. Hay, F.R.S.E. (Edinburgh, Blackwood, 1851); "Colour applied to Decoration," by G. B. Moore (London, Taylor, Walton, and Maberley); "Emblems of Saints," by Rev. F. C. Husenbeth (London, Burns and Lambert); "Modern Domestic Cookery," by a Lady (London, Murray); "Smithfield," by Thomas Dunhill, Civil Engineer (London, Effingham Wilson, 1851).

"*Books and Addresses.*"—We have not time to point out books or find addresses.

NOTICE.—All communications respecting *advertisements* should be addressed to the "Publisher," and not to the "Editor:" all other communications should be addressed to the EDITOR, and *not* to the Publisher.

ADVERTISEMENTS.

ROYAL POLYTECHNIC INSTITUTION.—Lectures on the Music of Wales, by Ellis Roberts, Esq. (Harpist to H.R.H. the Prince of Wales), with Vocal Illustrations by Miss Blanche Younge, R.A. of Music, on Monday, Tuesday, Thursday, and Friday Evenings at Eight, and on Saturday at Three.—The celebrated Juvenile Harpists (the Lockwood Family) will perform Trios, under the direction of Mr. Frederick Chatterton, daily at Four o'clock.—Lecture by J. H. Pepper, Esq. on the Chemistry of Ignition and Combustion, with brilliant Experiments.—Lecture by Dr. Bachhoffner on Voltaic Electricity, in which will be exhibited Allman's Patent Electric Light.—Exhibition of the Oxy-Hydrogen Microscope.—New Series of Dissolving Views, illustrating some of the Royal Residences of Europe.—Admission, 1s.; Schools, half-price.—Open daily from Eleven till Five o'clock, and every evening (except Saturday) from Seven till Half-past Ten.

BUILDING FOREMAN WANTED immediately.—A person who has a thorough knowledge of Brickwork. One who has been employed in the erection of Gas-works preferred.—Application, by letter only, stating experience and salary, to be addressed to X. Y. Z., at Watling's Newspaper Office, 409, Strand.

TO BUILDERS' FOREMEN.

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